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NEW PUBLICATIONS.

Transactions of the Essex Agricultural Society for 1834. *Vol. II., No.* 4, *March*, 1835.

The "Transactions of the Essex Agricultural Society, of Massachusetts, for 1834," has just reached us; and contains its usual amount of interesting and instructive matter. This society deservedly ranks among the highest in the country for its activity, enterprise, and intelligence, and is entitled to the greatest credit for its practical and instructive services in the great cause of an improved agriculture. The most particular honor is due to its indefatigable and intelligent Secretary, and several of his distinguished associates, who act as chairmen of the respective committees. The sensible and useful address of Mr. Moseley, President of the Society, we have already given to the public in a former number, as it was first published separately. We shall now subjoin some extracts from the various reports of examinations for premiums.

ON THE DAIRY.

The Committee of the Essex Agricultural Society, consisting of Daniel P. King, Chairman, and others, report:—

"That they consider a well managed dairy one of the most valuable sources of a farmer's revenue. Our proximity to large towns and manufacturing villages insures a ready market and fair prices. The product of a good cow, for a single season, in milk, butter, cheese, and the unsaleable refuse, may be estimated at more than thirty dollars. The same food consumed by other stock will hardly yield to the farmer half that sum. Oxen and horses are necessary, but economy seems to indicate that no more should be here kept than are required for labor. Young cattle may generally be purchased for less money than it would cost to raise them: a promising two year old heifer may be bought of the drover in the fall, for about twelve dollars; the butcher pays for a well fatted calf, a month old, nearly half the money, and fodder and feed must be abundant and cheap when the farmer can afford to keep such an animal two winters and three summers for six, eight, or even ten dollars.

Like every other part of the farmer's business, the dairy requires attention: the cows must have a constant supply of nutritive food and pure water, and salt occasionally; the dairy room should be clean and sweet, and used exclusively for that purpose; the pans and other utensils should be carefully scalded, and neatness and order should pervade the whole department.

Although the dairy is comparatively profitable, and although its products are a component part in so many of the comforts and luxuries of the table, there are some farmers of our acquaintance who have been obliged to abandon it altogether, or to conduct it on a smaller scale, on account of the difficulty of obtaining skilful and experienced dairy women. And here we have opportunity of proposing to fathers and mothers the question, whether, in the varied and refined education of their daughters, some of the most useful and important branches have not been neglected? Whether the more fanciful and ornamental attainments have not been substituted for the lessons of the kitchen and the dairy? Whether some delicate hands have not been so long occupied with the pencil, the embroidering needle, and the piano, that they have forgotten, or never learned, the cunning of the skimmer, the cheese tub, and the churn? Whether specious elegance has not been more studied than substantial usefulness? The former, indeed, should not be wholly neglected, but the latter are indispensable to the comfort and happiness of the community. An English writer, more noted than esteemed, but who on some subjects is good authority, in his Cottage Economy, observes:—"I must hear a great deal more than I ever have heard, to convince me that teaching children polite accomplishments tends so much to their happiness, their independence of spirit, their manliness of character, as teaching them to labor. The person that is in want, must be a slave; and to be habituated to labor cheerfully, is the only means of preventing nineteen-twentieths of mankind from being in want."

It was the benevolent wish of a kind-hearted monarch of France, that every peasant in his dominions might have a fowl for his Sunday dinner: how much more substantial the boon if every family might be blessed with the possession of that most useful animal, the cow, which supplies food, not for Sundays only, but for every day and every meal. And this possession is within the reach of almost every family of almost every town in this county. If the practice of keeping cows were adopted by all those who have the ability, much might be added to domestic comfort, and there would soon be no farther complaint of the difficulty of obtaining competent managers of the dairy. Besides the generous contributions of the cow to supply the wants of the family, the children may all learn to milk, and the females will learn to take care of it; they will know the value of such animals, will feed them carefully and treat them gently."

ON IRRIGATION.

The Committee of the Essex Agricultural Society, consisting of Daniel P. King, Chairman, and others, report:—

"That their attention was invited by Mr. Ebenezer Jenkins, of Andover, to four acres of mowing land, on which he has been making an experiment in irrigation. The field is a sandy gravel, the kind of soil most capable of improvement by watering, and so situated as to be flowed at pleasure. Mr. Jenkins bought of a neighbor the use of the water and the privilege of digging through his pasture for ten years, for twenty dollars; he then built a dam across a constant stream and made a channel about fifty rods in length; by means of this and other smaller ditches, he conducts the water on to his field in such quantities and at such times as he thinks proper. Mr. Jenkins states that it is his practice to bring the water on the last of April, and to stop flowing about the 25th of June. In the spring of two years out of the four that his land has been in a course of experiments, he has applied a very light top dressing. The experiment has been successful, and creditable to the enterprise of Mr. Jenkins: the average crop of grass for a number of seasons, according to the statement of several disinterested and judicious farmers, had not exceeded 10 cwt. to the acre: for three past years it was nearly equal to 30 cwt., and the present season, was judged to be two tons to the acre; the quality of the hay is good, and it would command a fair price in the market.

Irrigation, though long and extensively practised in other countries, has been but seldom attempted here. That it might be profitably employed by many farmers, is probable; that it has been so employed by Mr. J., is certain. We will offer him a few suggestions; if the trial should not prove them to be improvements, he will have the additional merit of having extended his experiment; and having proved many things, he can hold fast to that which is good.

We think he should commence flowing earlier in the spring, and draw off the water sooner than the 25th of June; his grass would be ripe earlier, and by bringing on the water directly after the hay is housed, he would probably secure a heavy second crop. If his top dressing were applied in the fall instead of the spring, it would protect the grass in the winter, and might be productive of greater advantage. Mr. J.,

in his statement, remarks that "observation and judgment are required to know how and when to apply the water;" we agree with him, and offer our hints with some distrust of our ability to advise him. The writers on the subject whom we have consulted, recommend a course different from his in some respects. They say that the night, and cool or cloudy weather, are to be preferred for bringing on the water. They also give a general rule, that no water should be applied, (unless in time of drought,) when the grass is tall and nearly full grown, as it might cause it to lodge, might make it gritty, or give it an unpleasant taste.

ON BULLS.

Extract from the report of the Essex Agricultural Society.

The Bull is one of the most important animals to the farmer, and great discrimination and judgment should be used in his selection, either for the draft or the dairy. For the dairy, it is a most important point his maternal ancestors should be great and rich milkers, and his paternal ancestors out of stock known to possess these qualities in great perfection; and no bull calves, even under these circumstances, should be raised except those of most vigorous physical powers, well turned limbs, and compact bodies, with good temper and close smooth hair.

The bull for procreation is equal in the extension of his race, if properly fed and employed, to 50 or 100 cows; and one animal of this kind has been known to successfully cover near 200 cows in a season; which circumstance alone, fully proves the necessity of strict attention to every important point in his selection when intended for that purpose; and in raising him, should he not continue to possess all the good qualities requisite for such an animal, he should be mutilated and condemned to the yoke or fatted for the shambles. In fact, your committee would wish all the bulls in Essex to be as formidable as the bulls of Bashan, and all their progeny to be as strong and healthy as the flocks Jacob gained in the service of Laban. HECTOR COFFIN, Chairman.

ON AGRICULTURAL IMPLEMENTS.

The Committee on the examination of Agricultural Implements, of a new invention or improvement, beg leave to report:—

That no new invention was offered for premium, and but one improvement, which was a lever affixed to the cutter of the New-York cast iron side-hill plough, so as to bring it more truly to the use of the coulter, on both sides, than any one fixed in the centre of the beam could. This improvement is a simple, but in the minds of the Committee, a useful one; and they therefore award to Mr. John Follansbee, of West Newbury, a gratuity of two dollars.

Moses Colman, Esq., sent for exhibition his horse rake, made by the Shakers of Canterbury, of beautiful construction, every tooth shielded with iron, and a most complete instrument, which had been proved by two years' use.

The field for improvement, though much cultivated within the last fifteen or twenty years, is still open for the ingenuity of man to exercise his skill in abridging manual labor, and thereby reducing the greatest item of expense attendant on the practical farmer.

The plough, for which more than a hundred patents have been obtained, since the promulgation of that glorious document, the Declaration of Independence, has, by late improvements, arrived to such perfection, that could our oxen, like Balaam's ass, be endowed with the power of speech, they would shout, Howard forever, or, in the more quaint language of the late political times, "Huzza for Howard," the man who has relieved our necks of half their burden, and aided the harrow in its duties.

The threshing mills have experienced great improvements. The Pennsylvania revolving horse rake is also an implement of great utility, and it still remains for man to apply the horse power to the cutting and spreading, as well as raking of hay. Improvement in the art of corn shelling, so as to combine the separation of the corn from the cob, and the complete cleansing of the corn for use, still remains a desideratum for the ingenuity of man to supply.

With the hope that these suggestions may stimulate inventive minds to action, to supply these deficiencies, we most cordially offer our grateful thanks to all those laborers in this most useful field, who by their inventions have abridged labor, and thereby benefitted their country.

HECTOR COFFIN,
DANIEL PUTNAM,
MOSES NEWELL, } Committee.

ON DOMESTIC MANUFACTURES.

This Committee, Rev. G. B. Perry, Chairman, after mentioning the awards of premiums—some of which, for specimens of needle-work, were given to children 11, 5, and 4 years old, amounting in the whole to *the sum of one hundred and eight dollars* —proceed to say:

In presenting this report, they are happy to observe, what indeed must be known to all who have visited the room where the articles were exhibited, that their number was unusually large, and in general of a superior quality. It will be readily perceived that this increase in number, considering the limited time allowed the committee for examination, must increase the difficulty of examining and comparing them so as to judge correctly of their relative merits. All the committee assume is an honest desire to fulfil impartially the trust committed to them, feeling no ways confident that exact justice has in all instances been done.

There were several articles for which premiums or gratuities are awarded, and others perhaps nearly or quite as meritorious, not thus distinguished, upon which the committee would have been glad to have made some remarks. Among them may be mentioned specimens of different kinds of dressed leather, a great number of very substantial hearth rugs, several pair of linen hose, a variety of beautiful articles manufactured from the milk-weed, (asclepias syriaca,) and some interesting specimens of coloring done by Mrs. Merrill of Newbury. But our time did not allow of such discriminate records as would now make our remarks of the best service to the Society.

An unusual number of the specimens exhibited were the work of children from 4 to 12 years of age, many of them executed at leisure hours or between schools, and afford a happy and encouraging evidence of the industry of that interesting portion of our population. Your committee were at some difficulty to determine what should be done in relation to them, but concluded finally, as it was the great object of this Society to encourage industry and the development of the mechanical powers, they would recommend a gratuity of a dollar to each one whose work gave creditable evidence of a desire and ability to do well. Your committee think, however, that should the Society comply with this recommendation, it ought not to be construed into an intimation that the like course would be pursued at subsequent exhibitions.

Perhaps it may be observed with justice, that a large proportion of the articles were rather of the ornamental than, in the strictest sense of the word, of the *useful*—such as are more calculated to *please* than *profit*. Your committee are not enemies to taste and ornament; nor do they suppose because a thing is *good for nothing but just to look at*, that it is therefore worthless. Our benevolent and wise Creator has made, and does from year to year continue to make, many things of which we know no use except that they are *pleasant to the sight*; and we feel willing—more than this, desirous,—that the noblest portion of his creatures should in their appropriate sphere endeavor to imitate him. But with the beautiful he has given a still larger portion of what in civil economy is called the useful, or perhaps it may be more accurately expressed, he has rendered the useful attractive by finishing it in a tasteful and ornamental manner. We do not wish any of the specimens had been withheld, nor the attention to things of taste diminished, but we wish with these an increase of those of a more substantial character, and particularly of those where the useful are rendered interesting and attracting by an ornamental and tasteful finish. We are persuaded we shall express the feelings of the Society, and of the community generally, when we observe that the great and good design of this annual exhibition will be more fully answered, if in subsequent years our young female friends, and indeed those of greater age, together with their highly finished specimens of bead and lace and various fancy work, will also bring well wrought specimens of plain sewing and knitting, garments of common wear, and other necessary and substantial articles of domestic life: things which meet the wants and subserve the interest of every day, and by which, even in the busy *forenoon*, a family would appear attracting, as well as when at eventide they are ready to see friends and enjoy the sweets of social life.

The county abounds with specimens of

the sorts referred to. In very few portions of our country are the principles of taste and economy more happily combined than in our own county. What we ask is, that our annual exhibitions may have their interest and usefulness increased by a more extensive collection of them.

Remarks of the Trustees of the Essex Agricultural Society, in offering premiums for Butter and Cheese.

The trustees have heretofore been desirous of encouraging the making of good butter and cheese. A large proportion of their premiums have annually been given for these articles. They are easily prepared for exhibition, and can be transported without material injury. They are in a peculiar manner susceptible of improvement, by careful attention to the manner of making and preserving the same. Every person who has ever known the distinction between *good* and *bad butter*, must be astonished when he considers how much the purchaser loses by want of care in the making of this article. It is not too much to say, that the farmers of Essex might *save thousands of dollars* every year, if they would but give proper attention to the management of their dairies.

Remarks of the Trustees of the Essex Agricultural Society, at the conclusion of the list of premiums offered for Silk.

All applications for the foregoing premiums must be accompanied with statements of the expense of time and money incurred, the whole management of the trees, worms, &c., the method of reeling and manufacture of the silk, and whatever may be necessary to enable the committee, and all concerned, to judge of the expediency of encouraging the farmers of the county generally to engage in the culture of silk, to estimate the benefits which may result to others from the knowledge of the experiments and practices of the claimants, in the prosecution of this new and interesting business.

It is the object of the Society to reward valuable improvements only, and consequently it will not feel bound to pay the premiums offered, unless something superior, more valuable, and better of its kind, is exhibited, than those nurseries, plantations, and specimens of silk, &c., for which premiums have heretofore been given. On the other hand, gratuities will be given, should any valuable invention or improvement in the cultivation of the white or Chinese mulberry trees, the management of silk worms, the manufacture of silk, or any thing calculated to promote the object in view, be exhibited, and for which no particular premiums are offered.

Applicants for the ninth and tenth premiums will bear in mind that it is for the amount of food for silk worms which their trees, in 1837, shall be adjudged capable of producing, more than their trees, if any they have, produced last year, (1834,) that these premiums are offered, and that a statement of the number and condition of their trees the present spring, certified by disinterested witnesses, will be required. These premiums are designed to effect two objects—the planting of new nurseries, and the improvement and preservation of nurseries and plantations for which premiums have been paid by this Society. The committee to whom this subject has been referred by the trustees, cannot dismiss it without once more calling the serious attention of the farmers of Essex county to the culture of silk. It is a product which can never fail to find a market, and which we have every reason to believe can be produced here as well as elsewhere. Discouragements and difficulties, as in every other business which is new to those who undertake to practice it, must be encountered, but patience and perseverance will conquer them all. "Believe it or not," says one of our most intelligent and gifted editors,* "men of New-England, your prosperity is yet to depend chiefly, if not altogether, upon agriculture and manufactures, and the sooner you understand this, the better. We must have a home market equal to that of China, one day or another. Even commerce, at no very distant day, will be but a losing trade with our people, if they have not laid a foundation for supplies and exports which are hardly dreamed of now. See what has become of our West India trade, and our lumber trade, and our *lumber districts*, impoverished by their own apparent prosperity, like the winners at a gaming table or in a lottery. A few made rich at the expense of a whole neighborhood of paupers. Neglected lands, neglected morals, neglected bridges, highways, school-houses and meeting-houses. But so it must ever be, where money is not *worked for*, *steadily* and *honestly*, and acquired *gradually*."

The Florist's Guide, containing practical directions for the cultivation of annual, biennial, and perennial flowering plants, &c.

It must be cheering to every heart warmed with a spark of public spirit, to see the amazing advances in the arts, both useful and ornamental, by the united efforts of science and labor; and to contrast their progress now with their creeping, and often retrograde pace, when what was pretended to be science was soaring in the regions of hypothesis, out of the sight and hearing of reason, and when the arts were groping in darkness, like a mariner at sea, in cloudy weather, without charts or instruments.

We are led to these reflections by perusing a little book, which, owing to the press of business, has lain on our table several days, but which, if duly placed before the public, may serve, as a just criterion by which to decide on, every man or woman who reads it, whether they possess taste and refinement, or are wholly destitute and unsusceptible of those desirable qualifications; for we will venture to set it down as an axiom, that any person who is not delighted with the beauties of a flower garden, has a mind, if it can be called a mind, incapable of any thing which can exalt the human character.

If we are believers in what is generally allowed to be divine revelation, we must believe that God placed man in a *garden* as the station of highest delight his nature was capable of enjoying; and when his disobedience required it, he expelled him from the garden as the severest earthly punishment. It will hardly be disputed that a flower is, in itself, the most beautiful of any single object. How exquisite then must be the effect, when science and art combine, aided by the lessons of experience, to bring together all the vast variety of the floral kingdom, and to improve them by cultivation and arrangement to the highest possible advantage.

Such is the object of the book before us; and we have no hesitation in saying that we think it proves, not only that the author is completely master of the subject on which he has written, but that he has been equally successful in cultivating his own mind. Much, however, as we are pleased with his little book, we are more pleased with the anticipation of a visit to his garden, when the pencil of nature shall have assisted him in arraying it in her greatest variety of tints. B. S.

The Rural Library, a re-publication of Standard Works on Agriculture, Gardening, and Domestic Economy. Vol. 1, Nos. 1 and 2, monthly, of 32 pages. Price, $2 per annum. H. Huxley & Co., New-York, 1835.

The object of this work is to bring within the means of almost every individual in the country the best and most approved works on subjects bearing on the prosperity of the whole community, and interesting to all whose taste leads them to admire the productions of nature, or to follow rural pursuits. We learn from the prospectus that this library will embrace not only practical works on agriculture and gardening, but those on domestic economy, on some of the sciences directly illustrative of the leading objects of the work, and on those productions of the bard that paint the beauties and delights of rural life. The first number contains complete Cobb's Manual on the growth of the mulberry tree, and the culture of silk, and is embellished with two lithographic plates, containing the representation of the eggs of the silk worm

* John Neal, Esq., Portland.

the worms in their five different sizes or ages, the perfect insect, the cocoon, and the leaves of the Italian and Chinese mulberry, also three reels. Mr. Cobb's Manual is the best practical book on this very important subject that has yet appeared in the United States. Every cultivator of the soil should have it in his library. In addition to the manual, the first number commences a treatise on agriculture, written by a distinguished individual of this State, and published with notes by J. Buel, Esq. and highly recommended by him. This treatise is completed in the second number of the Library. Thus two valuable works are here presented in an attractive form, for a price not exceeding the worth of the colored plates, and less than half of their original cost.

The reprinting of standard works in periodical numbers forms a new era in literature, and in the facilities for diffusing useful knowledge. Literature and science will by these means more rapidly gain admission to every fire-side, and into every family circle. We are glad to see, that in the Rural Library the farmer, and the gardener also, will be enabled to possess the best writings on their pursuits. This work and the New-York Farmer, or some other similar periodical, will alone, in a few years, form a very useful and respectable library—one which will enable the cultivator to keep pace with the progress of knowledge and improvements in rural arts and sciences. S. F.

ORIGINAL COMMUNICATIONS.

Hops. By H. C. [For the New York Farmer, and American Gardener's Magazine.]

The opinions of intelligent and practical men, or rather the results of their own actual experiments, are of great value. This applies particularly to small farmers, whose operations, being on a limited scale, receive their immediate personal attention. In looking at such results, however, those who farm on a large scale are liable to be led into error in expecting that the same will follow an extended cultivation, forgetting that the success is in many cases mainly to be ascribed to this minute personal attention, stimulated and strengthened by self-interest. In extended concerns, that attention cannot always be given; and as much hired labor is employed, the powerful motives of interest do not operate. The large and enterprising farmer, therefore, must take this into consideration: as his concerns extend themselves, his risks are multiplied; and if the results of his cultivation are not proportionately correspondent to those of the small farmer, he must often place it to the account of circumstances absolutely beyond his control. Nothing valuable in this world is accomplished without perseverance, labor, fidelity, and attention. This is one of the wise provisions in the constitution of things; one of the beneficent laws of a righteous Providence. On the other hand, labor, perseverance, fidelity, and attention, seldom fail, in ordinary circumstances, of reasonable success. The business of the farmer particularly demands his attention, and his ill fortune may be but too often traced to neglect, to this want of personal attention, to the division of his care among other pursuits, or to a miscalculation in extending his operations beyond his power of immediate careful superintendence. These remarks often occur to me in my visits among our small farmers, with whom I have been much in the habit of familiar, agreeable, and instructive intercourse; whose affairs are managed under their own immediate and constant personal attention, and among whom I often meet, with the highest pleasure, with examples in a small way of eminent success. I have been long accustomed to note the observations of such men, and to gather and record any facts which they have been kind enough to communicate, where I knew I could rely upon the correctness of their statements. I now send you some information, obtained in this way, in relation to the cultivation of hops by two farmers, who cultivate a small farm in partnership, in a town in Vermont, on the Connecticut river.

Messrs. D. & H,. in 1833, from four acres obtained 3000 pounds, which sold for 20 cents per pound. In 1834, from five and one half acres they obtained 4000 pounds, which sold for 15 cents per pound. In 1833 they judged that their land, after deducting all expenses, yielded an income of one hundred dollars per acre.

Hops are planted eight feet apart in hills. The cuttings are planted, and Indian corn is cultivated among them the first year, about half as thick as when planted by itself. The corn and hops are hoed at the same time. The second year the hops are poled and a crop gathered.

Green barn manure is thought to be injurious to the vines. Fall manure, or compost, is deemed best. The hills are opened in the spring; the vines are then trimmed, the ground loosened, and the manure applied to the hill. The field must be kept clean of weeds. The hops are gathered by hand. Women are employed in the picking at 20 cents per day. They require to be kiln-dried immediately, as they are very liable to be injured by heating in the heap. From 45 to 75 pounds are kiln-dried at a time, and the process of drying occupies about twelve hours. After drying they are put into a heap and suffered to sweat a little, and then conveyed to be packed and bagged, which is done by a screw press. They are packed and screwed for about five dollars per ton, and are then sent to market without delay. The manner and condition in which they are put up is of the greatest importance, for if the inspector discovers, on trying the bag, that any are discolored, the whole bag is condemned. Spruce poles for hops, about 15 feet high, cost here one cent a piece. Messrs. D. & H. gave 25 cents per 100 this year, and cut them for themselves. They will set this year about 4400.

The market price of hops is very fluctuating, and the risk of curing them well is very considerable, and requires great experience and care. The ordinary yield per acre I am not able to state, as it varies greatly. In some parts of this state they are extensively cultivated; and on land, which, without great attention, would make very small returns. A farmer in Boxboro', Mass., recently from five acres of land gathered ten thousand pounds; and I have been credibly informed that a farmer on the river, about twelve miles above this, the year before the last, received from twelve to fourteen hundred dollars from the sale of his crop of hops. The cultivation, I am persuaded, might be extended to great advantage, as there is little fear that the market will be over-supplied. It must not be forgotten, however, that the quality and condition of the article, when sent to market, is of the last importance. Good hops will always command a fair price. Damaged or ill-conditioned hops are worthless. H. C.

Meadowbanks, May, 1835.

Maple Sugar. By H. C. [For the New York Farmer and American Gardener's Magazine.]

The manufacture of sugar from the sap of the maple tree is becoming a matter of considerable importance. It is from year to year increasing; the value of this beautiful and useful tree is more highly appreciated than formerly; and many intelligent farmers are forming considerable plantations of it, as an important appendage to their establishments. Several families within my knowledge make more than enough sugar and molasses for their domestic supply; some of them producing five hundred, some one thousand, and some as much as fifteen hundred pounds per annum; and in a small, rough, and mountainous town in my vicinity, of a very sparse population, it is calculated that at least 20,000 pounds are annually produced. The tree is of rapid growth, and of a cleanly and beautiful appearance. Indeed I do not know of a handsomer variety; and its plantation in long avenues for the embellishment of the streets and the road sides is much prevailing in the beautiful villages of the Connecticut valley, where it finds a congenial soil, and grows with great luxuriance. Some of the sugar which I have seen this season has been of the finest description, not surpassed in color, clearness, and brilliancy, by the very best cane sugar of New Orleans or Jamaica; and a good deal, I am told, has heretofore been refined in New York, and sold for loaf sugar of the first quality. Lorain justly remarks, that it has one great advantage over sugar manufactured from the cane, and that is "the certainty of its proceeds not being contaminated with the great and disgusting quantity of decaying animal matters, necessarily mixed with the product of the sugar cane. The latter is gathered when animalcula of every kind prevail; the former before they predomi-

nate to any extent that would claim serious attention."

I have myself had little experience either in the cultivation of the tree, or the manufacture of the sugar; but I have thought that the information which I have gathered from those who are familiar with the subject, would not be unacceptable to the agricultural public.

The sugar or rock maple abounds in many parts of the country. The sap from the white or soft maple is not so strong as that from the rock maple, but is yielded in equal abundance, and makes equally good sugar. The walnut tree yields a sweet sap, but in very small quantities, and of a frothy nature. Small parcels of sugar are sometimes collected from the ends of walnut sticks in the wood pile, where the exuded sap has become dried in the sun. The black birch likewise yields sap in abundance, but not sweet enough to be manufactured into sugar. A single tree of black birch has been known to yield a barrel of sap in a day.

Maple trees differ much in the quality of the sap which they yield; some yielding much sweeter sap than others. The cause of this is not known, nor does it appear from any facts, which have been observed, that it is connected with the soil in which the tree grows. Old trees are thought to yield sweeter sap than young trees, and trees which have been frequently tapped yield a sap of more sweetness than others which have not. A barrel of sap, thirty-three and one third gallons, will yield ordinarily from seven to nine pounds of sugar. A sugar orchard of five hundred trees is calculated to yield upon an average one thousand pounds per year. Oftentimes much more than this. It is not unusual to find a tree which will fill three buckets with sap in a day—a bucket holding about two gallons. A tree has been shown me from which twenty-seven pounds of good sugar have been made in one year, and I have been credibly informed of two instances in which thirty pounds have been produced in a season.

The weather most favorable for making sugar is when it freezes at night and thaws by day. No sap can be obtained with advantage after the buds begin to swell. Sugar is sometimes made in the autumn, but by no means with equal advantage as in the spring. It is advisable to tap a tree on the south side, because it is more likely to thaw there, and the sap is obtained sooner in the morning, but no difference is perceived in the sweetness of the sap from either side.

The best mode of tapping the trees, as I learn from some practical men, who have been for thirty years accustomed to the manufacture of sugar, is with a narrow chisel. An incision is made in the tree, which is technically called a box. This, if made with care, is not thought to injure the tree. It will soon close, and after a year or two the tree may be tapped again in the same place. These individuals, to whom I refer, disapprove very much the tapping of trees by boring with an auger three or four inches, as in examining such trees after they have been felled, it is found that these deep borings never heal like the incisions made with a chisel, nor do they yield any more sap. Trees, instead of being injured by being tapped, are supposed, if the operation is performed judiciously, to gain vigor and strength from it.

In the manufacture of the sugar, cleanliness in all the vessels for collecting the sap, and boiling and refining it, is deemed of paramount importance. Troughs made of new and unseasoned wood, and any acidity or mouldiness in the buckets used for collecting the sap, are almost certain to injure the sugar. By some persons it has been recommended, instead of wooden buckets for collecting the sap, to use earthen vessels; but these would be of more difficult and unsafe transportation, and liable to be broken by the frost.

I have received a pretty full account of the manufacture of this article from a respected friend, who has been acquainted with the process in his own practice for forty years, and I take the liberty of subjoining his letter at large.

Leverett, April 14, 1835.

Sir,—You wished me to state to you the process of making maple sugar. No two persons take exactly the same method, yet all think they take the best. I will tell you the course which we pursue. The sap-tubs are made thoroughly clean by scouring with sand and water, and scalding them as soon as they are taken from the trees in the spring. They are housed until the next spring, and we scald them again before they are put to the trees. It has been found impossible to make good sugar unless the tubs are cleansed from an acid and mould, which is taken from the sap the preceding spring; otherwise the tubs will become black, and the sugar will not grain. I tap my trees with an inch and a quarter chisel; we cut into the wood of the tree about three quarters of an inch, in a sloping direction, so that the box (as we call it) will hold a spoonful or more. We bore so as to strike the lowest place in the box with a three-eighths of an inch breast-bit. The spouts are made and sharpened to suit with the bit. A man who is used to it will box three hundred in a day; another man will bore and set the spouts. Some people tap their trees by boring into the trees with a half or three quarters of an inch bit or auger; but I am persuaded that it hurts the tree much more than the chisel. So far as the spout drives into the wood we get no sap, and of course we must bore into the tree three or four inches, which will occasion it to rot at the heart. I have known a sugar maple to blow down, which was two feet or two feet and a half through, and which had been tapped with a chisel for eighty or ninety years, and for the last thirty years perhaps with two boxes each year, which was very thrifty and perfectly sound, excepting what had been cut away with the chisel. This tree was probably tapped first when about eight inches through, for at that bigness we begin to tap our trees.

I have thought the sugar maple was given to us by a kind Providence to be used in the same way and for the same purpose for which we use them, for no other tree, which I know, would bear cutting so much and for such a length of time without injuring its growth. I am speaking of trees standing in open land. Trees standing in a forest will not bear tapping so well. There need be nothing said respecting gathering the sap; but special care ought to be taken to cleanse the barrels, especially those in which cider has been kept. (Many of the most careful sugar makers keep barrels expressly and exclusively for this purpose. H. C.)

To make good sugar, much depends on the boiling from the commencement to the end. We boil our sugar chiefly in iron kettles, which hold about a barrel, set in arches. The sap is apt in boiling to rise and boil over, to prevent which we put into it a small quantity of butter; a piece as big as a walnut put into it at several times will prevent its boiling over a day. The boiling throws the syrup upon the hot kettle above the syrup in drops, which immediately burn upon the kettle; and as the syrup settles in the kettle by evaporation, this burnt matter is continually gathering upon it. When the kettle is filled again, this burnt matter is washed off, at least the color and taste of it, into the kettle; this gives the sugar a dark color, bitter taste, and prevents its graining well. The best way that I know of to prevent this burnt matter hurting the sugar is to keep it off the kettle as much as possible, which may be done in part by never suffering the heat of the kettle to be raised to an extreme while boiling, and by scouring the kettle thoroughly once every day. Rubbing the kettle with a piece of brick or stone will make it bright and clean. All color in maple sugar gets into it after it is taken from the tree; the sap when it comes from the tree is as colorless as pure water. I have seen and tasted maple sugar, which was dried to sugar by the sun; it was as white as snow, and very pleasant to the taste. I have never thought that an artificial color added any thing to the value of butter, cheese, or sugar. I am told that sheet-iron pans, which are much used at present to boil down the sap in, are preferable to kettles; they boil faster, and it never burns upon the pan. Of this I know nothing by experience. We boil the sap down at the rate of about twenty to one; it is then set in tubs to settle; in twenty-four hours turn off what is clear. It may be kept several weeks if you choose without injury, unless it be very warm weather, which will occasion it to ferment. The dregs left in the tubs may be cleansed in several ways. They may be mixed with common sap from the tree and settled again, or sal æratus may be used, or milk, or an egg beat up, put into it and boiled; the filth will rise, and may be skimmed off, and so prevent any material loss. The syrup ought to be boiled down to settle once in twenty-four hours, for the less sap boiled at a time to sugar, the better the sugar will be; one barrel of sap boiled to sugar will be whiter and better than five barrels; five than ten; and so on.

The operation of boiling the syrup into sugar is better learned by seeing it done than from writing. I will, however, give

you a sketch of the way we proceed. We boil the syrup to sugar in a brass kettle, being lighter and easier to handle than iron. We boil about twenty-five or thirty pounds at a time, in a common five-pail kettle. The heat ought to be steady, without much blaze. If it is intended for lump sugar, we boil it until it will cleave quickly and easily from an axe, or some smooth and hard substance that is cold. We turn it into earthen pans, and stir it moderately until it is thoroughly grained, thence into dishes or smaller pans to cool. If for dry lively sugar, we boil it until it will break and fly like rosin when streamed into cold water or upon an axe. We then pour it into large earthen pans, and stir it moderately until it is grained and stiff as dough; after which we put it into a larger vessel, such as a large tray or bowl holding nearly two pails full, and stir it powerfully, to prevent its having hard knobs in it, until it is cold and lively. But the stirring of maple sugar to make it good cannot be learned, but by seeing it done, or by a long course of practice. If stirred too fast while graining, it tends to make it fine grained and clammy; if not stirred enough, it will be knobby.

If you can select any part of this letter, which will be of any advantage to others, you are at liberty to make such use of it as you please.

Yours respectfully,

ROSWELL FIELD.

Rev. H. Colman.

The aboye communication is so intelligible, full, and practical, that I have deemed it best to furnish it entire to the public, with many thanks for this obliging favor. In an interesting communication furnished to the Pennsylvania Agricultural Society, by Jonathan Morris, of Washington Co., Pa., (Memoirs, vol. vi. p. 252,) he states "that the sugar tree reaches the age of an hundred and eighty years, yet seldom measures more than four feet in diameter. It may be tapped when it is about two feet and a half in circumference; and if done properly in the manner described, neither the growth nor the duration of the tree will be affected.

"To plant out a *sugar* camp (or orchard) let the trees be 33 feet apart, or 46 trees on an acre. One acre thus planted will, in a good season, yield 130 pounds of sugar. I tapped 160 trees this year, and although I lost as much sap as would have made 100 pounds of sugar, I made at least 500 pounds. The farmer must not expect to derive any benefit from the land beyond the sugar, as the shade of the trees is very injurious to grass, and ruinous to grain."

Particular directions for the manufacture of this article may be found likewise in Cooper's edition of Willich's Domestic Encyclopædia, art. Sugar, and in Lorain's Husbandry, c. xli.

The first part of the present season was not propitious; a second and favorable opportunity occurred, however, in April, of which many availed themselves to their advantage. It is a valuable luxury among other domestic agricultural comforts. Many small farmers sell from 50 to 100 dollars worth annually. It commands readily in cakes from 10 to 12½ cents per pound, and that which is superior brings sixteen cents. The thick syrup, or maple molasses, as it is called, a delicious condiment for puddings and other domestic uses, commands readily one dollar a gallon. The manufacture, though laborious, occurring at a season of the year when other farming business is in a measure suspended, may be considered as so much gain in the profitable application of labor. H. C.

Meadowbanks, May 5th, 1835.

Destruction of the Canada Thistle. **By Wm. TAYLOR. [For the New-York Farmer, and American Gardener's Magazine.]**

Mr. D. K. MINOR,—The favorable reception which my communication on the six years' rotation system, and only once ploughing for any crop, which you inserted in your New-York Farmer of December, 1833, met with from the indulging public, and was extensively copied into other papers favorable to agricultural improvements, encourages me to venture to occupy, if you think it worth the room, a small space in your Magazine, which is read by the numerous friends of agriculture with increasing interest—although I am rather inclined to think, with H. Seely, Esq., of Onondaga, that rather too many large hear-say stories from credulous and visionary writers are admitted into your columns for the good of the cause; for, sir, at Ballston Spa, the last summer, on court week, I assure you, I was grieved at a large dinner table, well surrounded by agriculturists, to hear one of our respectable farmers, who we have frequently elected to a seat in our legislature, and a man of some reading, publicly to denounce our agricultural periodicals with the cant phrase of book-farming, because there is occasionally those large hear-say stories admitted, and some visionary theories not reducible to practice; but as well might we say, because the earth produces thorn and thistles, we will not cultivate the precious grain, or because it produces poison, we will not receive into our system that nourishment which its rich fruits kindly offer. But, Mr. Editor, I sat not down to find fault; but still I am fully satisfied by experience that a man may be provoked to good works by having his faults and foibles placed before him. But my object was to tell in a plain familiar way of a few practical things whereby many of my fellow men may be made happier and wealthier, and consequently better pleased with themselves and their situation.

About 6000 years ago our common Parent blessed the human race, and gave a command, namely, "Be fruitful and multiply, and replenish the earth and subdue it," clearly intimating that the blessing is not to be expected without obeying the command. And we find throughout our land a general willingness to obey the first part of the command, although we regret to say, we sometimes see OLD BOYS endeavoring to enjoy SINGLE blessedness. Yet there is a very general reluctance to obey the last part of the command to full purpose. What though it might require the sweat of the face to subdue the earth, and clear it of the thorns, and especially of the *thistles*, yet who would not cheerfully toil if he had laid before him a certain feasible and practicable plan of totally eradicating the Canada or Cursed Thistle, which is desolating our beautiful fields, and bringing its withering curse on so many of our otherwise beautiful plantations? And, sir, having within the last two or three years travelled considerably through the length and breadth of this noble state, and from east to west and north to south, (although not in so great a degree in the latter,) yet almost every where at short intervals, the eye is pained, in the months of June and July, with seeing the dark heads of the cursed thistle spontaneously running up above the grain, and leaving the husbandman a mere pittance of any thing useful to compensate him for his labor.

Now, sir, instead of this unsightly and desolating appearance, the eye may rest on waving and luxuriant harvests within 15 months, and the curse be totally eradicated, and the land, which no one in his senses, on condition of its remaining under the curse, would give ten dollars an acre, will then be worth from 20 to 50 dollars per acre, and thus prevent the sowing the seeds of poverty, wretchedness, and ruin, not only over the whole of his own plantation, but also over his neighbor's, which he is morally as much bound to do, as he is to keep the withering influence of the plague, or intemperance, from approaching his neighbor's family through his contagious example, or neglect.

And how shall this great desideratum be accomplished? One will tell you, by throwing brine on them; another, by salting cattle on them; a third, by cutting in the old of the moon in June; a fourth, by whipping the tops to pieces with a walking stick; a fifth, by digging the ground up three or four feet deep, and picking out the roots; a sixth, by planting with corn, and hoeing very frequently; a seventh, by going over the ground very frequently with the hoe while in grass, and cutting them off, &c. &c.

Now, while I am ready to allow that small spots, or even half acres, may in the two last methods be eradicated, for I have tried them all, and have been successful in the two last, and although one man in a thousand may have resolution and perseverance enough to destroy his three acres in a year, by planting with corn, and hoeing once a week, yet he must be a Cæsar, an Alexander, or a Napoleon, and of no ordinary resolution, to accomplish it; yet one of our veteran brethren, of nearly three score and ten, in the west, tells us, in that excellent practical little work, the Cultivator, that he has done it in some seasons, (and in some has failed altogether, when business or other things pressed hard, and demanded his time,) and I know of several who have expected to clear their fields of this thistle by planting corn and hoeing once or twice extra, that have actually increased them in one year two or three fold. But, sir, permit me to assure you, and through you my agricultural brethren, and all others concerned, that if ever the evil is rooted out of our land, where it has got possession of its fives, tens, twenties, and fifties, of acres on

a farm, it must be done by some method which every man of *ordinary* means, industry, resolution, and perseverance, may succeed in, without the possibility of a mistake; and that way, sir, most assuredly, is the plough. I speak from experience; it will do the business, and at a far less expense than one would suppose. First clear the ground of stones, and rocks and stumps too, if practicable; if not, carefully dig round them with a hoe every time you plough. Commence ploughing early in the spring, and plough once a fortnight until the first of June; then once a week; and if the piece can all be ploughed in a day, let it be on a certain day in the week, that it may never be forgotten—say on Saturday, and by the latter part of September the enemy will be completely subdued, and your ground prepared for a crop of winter wheat, or for barley, peas, oats, or corn, the coming spring. It is always well, after sowing, to strike out with a furrow the ground in small lands, that if ever a solitary wanderer should appear, either from seeds or otherwise, it may be easily detected and pulled up. It is supposed we have in this State more than ten thousand acres of land nearly ruined for cultivation by this thistle; and how much better would the owners of this land feel to see the curse removed, and a fine crop of useful grain growing in its stead, and the land trebled and quadrupled in value; and the whole expense, after the land is cleared of stumps and stones, will not amount to the value of one good crop. All we have to do is immediately to set about the business systematically, and it will be fully realized, not only to one hundred fold profit, and the great pleasure of the owner, but to the unspeakable joy of all his surrounding neighbors. I fear I have already been quite too prolix, and if you and your readers' patience has not been too severely taxed, I would like to tell at another time, how I have made between eight and ten thousand dollars from ten common sheep, and how any body else may do the same; and notwithstanding all that is said about the necessity of changing flocks of sheep, I have never changed mine, and they will now bring me by the hundred four dollars a head; also how I have kept my stock of cattle, sheep, and horses, free from black tongue, or any other serious disorder, for more than 20 years, and how I believe others may do the same. I would like to give the results at some future day, (if time permits,) of some experiments made last September with salt as a manure on wheat, when sown at the rate of 3 bushels per acre; also salt and ashes at ditto; also of sowing wheat, hot fur, &c. &c.; but I think your readers will all say quite ENOUGH for the present.

And as I know not that I have any pride or vanity to gratify in making this communication, but simply a desire to be useful to some one or more of my fellow citizens, and to do something to pay the debt I owe to others for their information, I would heartily respond, Amen.

WM. TAYLOR.

Pleasant Valley, Ballston, West Line, Saratoga county, April 29, 1835.

Broom Corn. By H. C. [For the New-York Farmer and American Gardener's Magazine.]

The cultivation of Broom Corn is carried on to a very great extent on some of the alluvial lands on the Connecticut river, and in small patches in many of the interior towns. The towns of Hadley and Hatfield raise large quantities, which are manufactured into brooms, and distributed throughout the country. The seed is considered of about two-thirds of the value of oats, and, mixed with corn, makes an excellent provender for the fattening either of swine or neat cattle. The return of seed is somewhat precarious; but often it is abundant, and will more than pay the whole expense of cultivation and preparing the crop for the market. I have known a case in which 150 bushels of good seed have been obtained from an acre; and I have been assured, on good authority, of a still larger yield, though this is not frequently to be expected. One thousand pounds of broom to an acre is a very good crop. It will pay well for manuring and good culture. No crop is more beautiful than the standing corn when in perfection. It frequently attains a height of 12 to 15 feet. The stalks of the plant are very long and hard, and, therefore, rather difficult to load upon a cart. They are considered as of no value but for manure. The usual practice is to table the corn, that is, to cut off the top, or tassel the broom, as it is called, about two feet from the top, and bending the stalks of two rows together, lay it down until it is seasoned and fit to be carried in. The remainder of the stalks are then burnt in the spring in the field, and some little advantage is derived from the ashes. A much better way, it is thought, is, after gathering the crop, to cut the stalks and lay them lengthwise in the rows, and plough them immediately under. They will become entirely decomposed by spring. A still better mode is to carry them into the cattle and sheep yards, where they become incorporated with the manure, and make a valuable addition to the compost heap.

The seed is planted in rows, wide enough apart for the plough to pass conveniently between them, and dropped in hills about eighteen inches from each other. Four or five stalks are considered sufficient to remain in a hill—more are sometimes allowed. The cultivation and manuring is more than for Indian corn. It may be manured in the hill or by spreading, or in both ways, as you have the means of high cultivation, which this plant will bear. The stalks are not eaten by cattle, nor even browsed by them; but I am not certain that the leaves would not furnish a good feed for young stock, if stripped early, when tender, and well cured, as the Indian corn blades are cured at the south. What would be the effect of such mutilation upon the crop itself, and whether it would compensate for the labor, are inquiries which I am not able to answer, and in respect to which I cannot learn that any experiments have been made. It is an important subject for experiment. As it is at present managed, the plant returns little to the ground compared with Indian corn; and the Hadley and Hatfield farmers are obliged to connect with it the fattening of beef to a considerable extent, to furnish manure for their broom corn.

It is deemed a good crop when the broom commands five cents per lb. The price has heretofore been subject to great fluctuations. At one time it was the custom for every farmer to make up his own brooms, and then to go and sell them where he could. This was bad for all parties. It brought too many competitors into the market; and often unduly depressed the price, and the buyers were often obliged to put up with an inferior article. Now the manufacturing and the growing of the broom are in different hands; and the farmer, as soon as his broom is ready for the market, finds a purchaser at a steady price; and the manufacturer feels that his reputation, and consequently his success, are concerned in the quality of the article which he furnishes.

It is a little remarkable, that notwithstanding the extent and importance of this product, for one manufacturer within a few miles of me makes several hundred thousands of brooms a year, that in no book of agriculture in my possession can I find any account of the cultivation of this plant, not even in that excellent New-England work, "The *Complete* Farmer." The Shakers for a long time almost monopolized the raising of the plant and the manufacture of brooms; and their brooms, which, like the other manufactures of this industrious community, were always of a superior quality, usually commanded a high price, generally 42 cents or more. Corn brooms are now frequently sold from eight to twenty-five cents; but many of them are like Pindar's razors, "made to sell." The Shakers, however, maintain the quality of their manufacture. The handles, in an unfinished state, are furnished for a cent a piece; the wiring and the tying on are usually done by the hundred. The scraping the seed from the brush is an unpleasant business, and often very injurious to the eyes. The manufacture, where it has been carried on extensively and with ample capital, has yielded encouraging profits.

An intelligent and enterprising farmer in my neighborhood, who last year cultivated three acres and one half of broom corn in our alluvial meadows, has been kind enough to furnish me a detailed account of the expense of cultivating an acre, which may be relied on for its exactness, but in which the rate of labor is probably over-estimated by the day. His broom was sold in the autumn at eight and one half cents per lb. It readily commands this spring 12½ cents; had he fortunately retained his broom until this time, the profits would have been greatly enhanced, while the expenses would, of course, have remained the same.

Account of the expenses of cultivating an acre of Broom Corn in Deerfield meadows, in the year 1834, by Mr. Alvah Hawkes:

One ploughing, 12th May,	$1.25
Holeing out, one third of a day's work,	34
Ten loads of manure, at 75 cents,	7.50
Putting manure in the hill,	2.00
Planting, one day's work,	1.00

Carried over.

Brought over.	
Seed, 4 quarts, at 75 cents per bushel,	10
Hoeing, first time 3 1-2 days,	3.50
do 2d do 3 do	3.00
do 3d do 2 1-2 do	2.50
Horse and boy to plough for the season,	1.00
Tabling and cutting, 4 days,	4.00
Gathering, carting, and packing away,	2.50
	$28.68

The expense of cultivating one acre is $28.68 cents, the labor being rated at one dollar per day, which is more than the actual cost, as I hired my laborers by the month, at from six to ten dollars per month. The yield was at the rate of 991 pounds to the acre. Had all my ground been fully stocked, it would have exceeded ten hundred pounds per acre.

The expense of scraping the brush for the seed was thirty-three cents per hundred pounds. The brush was sold at 8½ cents per pound. The crop of seed was light and poor; fifty bushels to three acres, worth 16 2-3 cents per bushel, or $8.33 to an acre.

Summary expense of cultivation of one acre as above,		28.68
Scraping 1000 pounds,		3.30
Board of man 5 days,		1.07
Rent of land, say $16 per acre,		16.00
		49.05
Sale of brush, 1000 lbs. at 8½c.	85.00	
Seed upon one acre,	8.33	
		93.33
Nett profit on one acre,		$44.28

The sale of the brush at 12½ cents per pound, the present price, would have enhanced the profits forty dollars, and made them $84.28. This is very remarkable, and certainly affords ample encouragement to labor. That it can be often done is not to be expected; and yet there is nothing extraordinary in the process. The uncertainty of the seasons is something, and the fluctuations in the market prices of broom are great. The amount of crop, though large, was not more than can usually be commanded by good and generous cultivation. Many of our lands, besides the alluvial meadows, are capable of producing good crops; and the great yield of 150 bushels of seed to the acre mentioned above, with broom, of course, in proportion, was produced in one of the most rough and rocky towns in the commonwealth, and on land which owed every thing to good management. I hope the length of these details may be excused. H. C.

Meadowbanks, 7th May, 1835.

We have been handed, by our esteemed friend A. W., an old manuscript, of a pocket memorandum size, which he found lately in examining some ancient relics, among the archives of his ancestors, but of which of them he does not know; but which show, we think, strong marks of a mind above the ordinary standard. Its handwriting indicates its age to be more than a century, and its contents appear to be the desultory and common-place remarks and observations of such a mind. They appear to have been written in England by a person who had seen different countries. We select a few passages, which, if they are as pleasing to our readers as to us, will need no apology. E. N. F.

Albany, March 27.

What an advantage must some Italian seats derive from the circumstance of being situated on ground mentioned in the classics! And even in England, wherever a garden happens to have been the scene of any event in history, one would surely avail one's self of that circumstance to make it more interesting to the imagination. Mottoes should allude to it; columns, &c. record it; verses moralize upon, it and curiosity receive its share of pleasure.

In designing a house and gardens, it is happy when there is an opportunity of maintaining a subordination of parts; the house so luckily placed as to exhibit a view of the whole design. I have sometimes thought that there was room for it to resemble an epic or dramatic poem. It is rather to be wished than required, that the more striking scenes may succeed those which are less so.

Taste depends much upon temper. Some prefer *Tibullus* to *Virgil*, and *Virgil* to *Homer*—*Hagley* to *Persfield*, and *Persfield* to the Welsh mountains. This occasions the different preferences that are given to situations. A garden strikes us most, where the grand and the pleasing succeed, not intermingle with, each other.

I believe, however, the sublime has generally a deeper effect than the merely beautiful.

I use the words landscape and prospect, the former as expressive of home scenes, the latter of distant images. Prospects should take in the blue distant hills, but never so remotely that they be not distinguishable from clouds. Yet this mere extent is what the vulgar value.

Landscape should contain variety enough to form a picture upon canvass; and this is no bad taste, as I think the landscape painter is the gardener's best designer. The eye requires a sort of balance here, but not so as to encroach upon probable nature. A wood or hill may balance a house, or obelisk, for exactness would be displeasing. We form our notions from what we have seen; and though could we comprehend the universe, we might perhaps find it uniformly regular; yet the portions that we see of it, habituate our fancy to the contrary.

The eye should always look rather down upon water; customary nature makes this requisite. I know nothing more sensibly displeasing than flat ground immediately bordering on water.

It is not easy to account for the fondness of former times for straight-lined avenues to their houses; straight-lined walks through their woods; and, in short, every kind of straight line, where the foot is to travel over what the eye has done before. This circumstance is one objection. Another somewhat of the same kind is the repetition of the same object, tree after tree, for a length of way together. A third is, that this identity is purchased by the loss of that variety which the natural country supplies every where in a greater or less degree. To stand still and survey such avenues, may afford some slender satisfaction, through the change derived from perspective; but to move on continually, and find no change of scene in the least attendant on our change of place, must give actual pain to a person of taste.

* * * * * *

When a building or other object has been once viewed from its proper point, the foot should never travel to it by the same path which the eye has travelled over before. Lose the object, and draw nigh obliquely.

The side trees in vistas should be so circumstanced as to afford a probability that they grew by nature.

Rumated structures appear to derive their power of pleasing from the irregularity of surface, which is *variety*, and the latitude they afford the imagination to conceive an enlargement of their dimensions, or to recollect any events or circumstances appertaining to their pristine grandeur, so far as concerns grandeur and solemnity. The breaks in them should be as bold and abrupt as possible. If mere beauty be aimed at, (which however is not their chief excellence,) the waving line, with more easy transitions, will become of greater importance. * * * * *

A cottage is a pleasing object, partly on account of the variety it may introduce, on account of the tranquillity that seems to reign there, and perhaps (I am somewhat afraid) on account of the pride of human nature:

"Longi alterius spectare laborem."

In a scene presented to the eye, objects should never lie so much to the right or left as to give it any uneasiness in the examination. Sometimes, however, it may be better to admit valuable objects, even with this disadvantage. They should else never be seen beyond a certain angle. The eye must be easy before it can be pleased.

No mere slope from one side to the other can be agreeable ground; the eye requires a balance, a degree of uniformity; but this may be otherwise effected, and the rule should be understood with some limitation.

——"Each alley has its brother,
And half the platform just reflects the other."

Let us examine what may be said in favor of that regularity which Pope exposes. Might he not seemingly as well object to the disposition of a human face, because it has an eye or cheek that is the very picture of its companion? Or does not Providence, who has observed this regularity in the external structure of our bodies, and disregarded it within, seem to consider it as a beauty? The arms, the limbs, and the several parts of them correspond, but it is not the same case with the thorax and the abdomen. I believe one is generally solicitous for a kind of balance in a landscape; and if I am not mistaken, the painters generally furnish one: a building, for instance, on one side contrasted by a group of trees, a large oak, or a rising hill on the other. Whence, then,

does this taste proceed, but from the love we bear to regularity in perfection? After all, in regard to gardens, the shape of ground, the disposition of trees, and the figure of water, must be sacred to nature, and no forms must be allowed that make a discovery of art.

All trees have a character analogous to that of men. Oaks are in all respects the perfect image of the manly character. * * * * A brave man is not suddenly either elated by prosperity, or depressed by adversity; so the oak displays not its verdure on the sun's first approach, nor drops it on his first departure. Add to this, its majestic appearance, the rough grandeur of its bark, and the wide protection of its branches.

A large, branching, aged oak, is perhaps the most venerable of all inanimate objects. * * * * *

By the way, I wonder that lead statues are not more in vogue in our modern gardens. Though they may not express the finer lines of an human body, yet they seem perfectly well calculated, on account of their duration, to embellish landscapes, were they some degrees inferior to what we generally behold. A statue in a room challenges examination, and is to be examined critically as a statue. A statue in a garden is to be considered as one part of a scene or landscape; the minuter touches are no more essential to it, than a good landscape painter would esteem them, were he to represent a statue in his picture.

Apparent art in its proper province is almost as important as apparent nature. They contrast agreeably, but their provinces ever should be kept distinct.

Some artificial beauties are so dexterously managed, that one cannot but conceive them natural; some natural ones so extremely fortunate, that one is ready to declare they are artificial.

Concerning scenes, the more uncommon they appear, the better, provided they form a picture and include nothing that pretends to be of nature's production and is not. The shape of ground, the site of trees, and the fall of water, nature's province. Whatever thwarts her is treason.

On the other hand, buildings and the works of art need have no other reference to nature than that with which the human mind is delighted.

Art should never be allowed to set a foot in the province of nature, otherwise than clandestinely, and by night. Whenever she is allowed to appear here, and men begin to compromise the difference, night, gothicism, confusion, and absolute chaos, are come again.

To see one's urns, obelisks, and waterfalls, laid open, the nakedness of our beloved mistresses, the naiads, and the dryads, exposed by that ruffian winter to universal observation, is a severity scarcely to be supported by the help of blazing hearths, cheerful companions, and a bottle of the most grateful Burgundy.

The works of a person that builds begin immediately to decay; while those of him who plants begin directly to improve. In this, planting promises a more lasting pleasure, than building; which, were it to remain in equal perfection, would at best begin to moulder, and want repairs in imagination. Now, trees have a circumstance that suits our taste, and that is annual variety. It is inconvenient, indeed, if they cause our love of life to take root and flourish with them; whereas, the very sameness of our structures will, without the help of dilapidation, serve to wean us from our attachment to them.

It is a custom in some countries, to condemn the characters of those (after death) that have neither planted a tree, nor have been the parent of a child.

The taste of the citizen and of the mere peasant are in all respects the same. The former gilds his balls, paints his stone work and statues white; plants his trees in lines or circles; cuts his yew trees four square, or conic; or gives them what he can, of the resemblance of birds, or bears, or men; squirts up his rivulets in jetteaus; in short, admires no part of nature, but her ductility; exhibits every thing that is glaring, that implies expense, or that effects a surprise, because it is unnatural. The peasant is his admirer.

It is always to be remembered, in gardening, that sublimity or magnificence, and beauty, or variety, are very different things. Every scene we see in nature is either tame and insipid, or compounded of those. It often happens, that the same ground may receive from art either certain degrees of sublimity and magnificence, or certain degrees of variety and beauty, or a mixture of each kind. In this case it remains to be considered in which light they can be rendered most remarkable, whether as objects of beauty or magnificence. Even the temper of the proprietor should not, perhaps, be wholly disregarded. For some will prefer an orange tree, or a myrtle, to an oak or cedar. However, this should not induce a gardener to parcel out a lawn into knots of shrubbery, or invest a mountain with a garb of roses. * * *

In pursuance of our present taste in gardening, every good painter of landscapes appears to me the most proper designer. The misfortune of it is, that these painters are apt to regard the execution of their work much worse than the choice of subject.

The art of distancing and approximating comes truly within their sphere; the former by the gradual diminution of distinctness, and of size; the latter by the reverse. A straight lined avenue, that is widened in front, and planted there with yew trees, then firs, then with trees more and more fady, till they end in the almond willow or silver osier, will produce a very remarkable deception of the former kind, which deception will be increased, if the nearer dark trees are proportionable, and truly larger than those at the end of the avenue that are more fady.

To distance a building, plant as near as you can to it two or three circles of different colored greens—evergreens are best for all such purposes; suppose the outer one of holly, and the next of laurel, &c. The consequence will be, that the imagination immediately allows a space betwixt these circles, and another betwixt the house and them; and as the imagined space is indeterminate, if your building be dim-colored, it will not appear inconsiderable. The imagination is a greater magnifier than a microscopic glass. And on this head I have known some instances where, by showing intermediate ground, the distance has appeared less, than while a hedge or grove concealed it.

Hedges, appearing as such, are universally bad. They discover art in nature's province.

Trees in hedges partake of their artificiality, and become a part of them. There is no more sudden and obvious improvement, than a hedge removed, and the trees remaining, yet not in such a manner as to mark out the former hedges.

Water should ever appear as an irregular lake, or winding stream.

Islands give beauty if the water be adequate, but lessen grandeur through variety.

It was the wise remark of some sagacious observer, that familiarity is for the most part productive of contempt. Graceless offspring of so amiable a parent! Unfortunate beings that we are, whose enjoyments must be either checked, or prove destructive of themselves!

* * * * * *

Gardeners look more to art than they do to nature in laying out their grounds.

Art, indeed, is often requisite to collect and epitomize the beauties of nature, but should never be suffered to set her mark upon them: I mean in regard to those articles that are of nature's province; the shaping of ground, the planting of trees, and the disposition of lakes and rivulets. Many more particulars will soon occur, which, however, she is allowed to regulate somewhat clandestinely upon the following account: Man is not capable of comprehending the universe at one survey. Had he faculties equal to this, he might well be censured for any minute regulations of his own. It were the same as if, in his present situation, he strove to find amusement in contriving the fabric of an ant's nest, or the partitions of a bee-hive, but we are placed in the corner of a sphere, endued neither with organs, nor allowed a station proper to give us an universal view, or to exhibit to us the variety, the orderly proportions, and dispositions of the system.

* * * * * *

A rural scene to me is never perfect without the addition of some kind of building: indeed, I have known a scar of rock-work in great measure supply the deficiency.

In gardening, it is no small point to enforce either grandeur or beauty by surprize: for instance, by abrupt transition from their contraries. * * *

Grandeur and *beauty* are so very opposite, that you often diminish the one as you increase the other. *Variety* is most akin to the *latter*, *simplicity* to the *former*,

* * * * * *

There may possibly, but there seldom happens to be, any occasion to fill up valleys with trees, or otherwise. It is for the most part the gardener's business to remove trees, or aught that fills up the low ground, and to give, as far as nature allows, an artificial eminence to the high.

Book Farming. By S. B. [For the New-York Farmer, and American Gardener's Magazine.]

Were this world to be visited by some supermundane being, who, after viewing the different countries and learning their history, should come to the United States, he would be lost in astonishment to find that such a knowing and tractable race of bipeds, capable of appreciating so wonderfully the value of liberty, should have remained thousands and thousands of years the property of tyrants of their own species and of their own making, and calmly and peaceably submit to have their heads chopped off, or their bowels torn out, or to be burnt alive, to gratify the peculiar whim, or to make sport for one of their fellow creatures. That in all that time they should have only just begun to find out that one man was born as good and as well entitled to freedom as another. Yet strange as this may seem, and horror-stricken as we may feel, on looking back, or looking round, on the pranks of human tyrants, it is no less true, though we hardly begin to suspect it, that we are still, universally and almost equally, the slaves of another tyrant, who is not a human being; who has no sympathies, and who is at times more oppressive than any human being *can* be, and his chains harder to be broken. And what makes it still worse, that inexorable tyrant has so much good mixed with his character, and his influence over us is so mingled with our natures, that there is no hope of deliverance from his chains, and the most deadly woes await the man who even aspires to emancipation.

That tyrant is Custom. Ask why the loss of a beloved member of a family fills a house with gloom and sorrow in one country, and disturbs a whole neighborhood with mirth and revelry in another; or ask why woman is respected and adored, as she ought to be, in one part of the world, while she is the most abject and miserable of all slaves in another—the answer in both cases is, "Custom so orders it." The very same human tyrants, who have so long and so shamefully lorded it over their fellow creatures, have always owed, and still owe, their authority to this still greater tyrant, Custom. The highest of all earthly authorities is the sanction of "Custom, since time whereof the memory of man runneth not to the contrary," and

> "Even slavery, though worst of ills,
> Because transmitted down from sire to son,
> Is kept and guarded as a sacred thing."

It is true, this tyrant is not particularly prone to evil, but is just as ready to sanction good deeds and good laws as bad ones. But when once sanctioned, there is no appeal. If custom commands to slit the ears into strings, and to wear a huge ring in the nose, or to maim and disfigure the body in the most horrid manner, it is vain for reason to plead against the practice; her "*still, small voice*" is drowned in the clamor of *ridicule*, the standing advocate of custom.

Among the worst evils which the human family has groaned under, is a law which has had the sanction of this tyrant from time immemorial, that the man who labors, or had any immediate connection with labor, should have nothing to do with science. Notwithstanding labor was the foundation on which all temporal happiness rested, and appears designed by nature to give our enjoyments the highest relish, yet it was decreed by custom, that the children and all the family connections of labor should wear the badges of degradation, while those of science, or rather those who held the mock pretences of science, should hold an elevated rank and look down on the family of labor with haughty disdain. It is no wonder that this decree and the consequent state of things should have bred unkind feelings between the two families.

It is only by a modern improvement, which has grown out of the art of printing, that the laboring class has been permitted to have the knowledge of letters; and this was considered by the learned world to be a dangerous innovation to their prerogatives. What could the poor clodhopper, who tilled the ground, or the dirty mechanic, who made, and perhaps mended their shoes, want of books? His business was to work, and to work all the time. If he read books he could not understand them, and if he did, it would only excite his pride and make him forget his place.

If a working man had occasion for a few hours' assistance of a lawyer, the poor man must work as many weeks to pay him; and this, if the laboring man ventured to question the propriety of it, was all made right and fair by the learned gentleman. It had cost him immense sums of money to get his learning, and a great sum more to get his room full of books, which were indispensable; and what was more to the purpose, this practice and state of things had the entire sanction of custom.

But though complaining was altogether useless, the laboring man could not help his thoughts; and he often, with the sweat reeking from every part of his body, while he was thus exchanging works with the learned gentleman, at the rate of weeks for hours, would reflect that it was rather an unfair trade.

Before the invention of printing, it was a rare circumstance to find a man who could read at all; and from that time until very lately, the knowledge of reading having now spread until it has become general, the jealous feelings between the men of science and the men of labor have rather increased than diminished. Hence it was, that in the time of Bacon and Newton, if any man wished to immortalize his name by writing something which, if read by the common people, would enlighten their minds, he wrote it in Latin. The laboring class of people, until recently, have had few inducements to read, or means of profiting by it if they did read. We had no books of any value on the useful arts, because men capable of writing well did not understand the arts, and those who did understand them, could not write books, or they wished to conceal their knowledge for their own benefit.

From all these circumstances, it is no way wonderful that a spirit of resentment should have become settled and fixed in the minds of the working class against those who have always treated them so scornfully; and that they should spurn at the offer of instruction from them, in that which they conceived they understand better themselves. The tyrant Custom has put his sanction upon the old adage, that "practice makes perfect," and the farmer pleads under this sanction, that he cultivates his ground and plants his corn in the same manner which he learned from his father, and he from his grandfather, and back as far as he can trace his genealogy; and he is not now to be taken in by some new-fangled project, learned out of a *book*, written by some book-worm, who never had a hill of corn in his life. No, no—no book-farming for him; he is too old a bird to be caught with such chaff. He is not going to be made a laughing-stock for all his neighbors, for learning to hoe corn out of books.

From these causes the farmers in general have little relish for reading. Perhaps they are not remiss in their attention to their bibles, and other theological books; and if they take a deep interest in politics, they occasionally read a newspaper; but beyond that, in most cases, their literary researches could not extend.

But this, to a discerning eye, casts no reflection upon their intellect, or upon the views which guide their moral course of life. They have too much good sense to spend their time in reading novels; and should they engage extensively in reading history, they see no essential benefit to result from it. If they turn their attention to works on the natural sciences, they know not where to begin, and the style is generally too obscure and too full of learned technicalities for their comprehension; and as to getting any information from books to guide them in their respective vocations, as such books have been generally written, they might as well look for it in a whirlwind.

But a new era has now fairly commenced, and this state of things is rapidly changing. Men of science now begin to find, that the best use they can make of their acquirements is to apply them to the useful arts, and especially to agriculture; which is not only the basis and support of all other arts, but is far the surest in fulfilling its promises of remuneration. Numerous specimens of agriculture, conducted on scientific principles, may now be seen, in this and other coun

tries, producing such results as would have been utterly incredible, without the evidence of ocular demonstration. Instead of the old slow and sure method of the industrious farmer, great numbers of enterprising farmers are now rapidly making fortunes by the application of scientific principles in aid of ancient practice. These men, instead of secreting their improvements, for fear of competition, as has been too much the practice formerly, are not only striving, with laudable emulation, to arrive at the maximum of agricultural production, but are generously communicating the result of their efforts, and the courses of management they have pursued, for publication, in the various periodicals devoted to the subject, in hopes to awaken the attention of the public, to share with them in the pursuits which they have found so pleasing and so profitable.

But, I repeat it, we have no need to wonder, or throw out any disrespectful remarks, upon the main body of farmers, because they do not read these publications, or even if they do read them, because they do not believe them. They have not only been drilled, from generation to generation, by those who styled themselves exclusively the learned and scientific world, in the belief that they had no business with books or with science; but the lessons have been accompanied with such treatment, as could not fail to give them a disrelish for reading of any kind, and more especially for books to teach them what they supposed they knew better than those who wrote them.

These deep impressions upon the minds of those who tilled the soil have had the seal of the tyrant Custom from the remotest antiquity. And because a few men, and comparatively but a very few, have been so fortunate as to discover the important secret, which has been thus forever studiously concealed from them, that *science* is the only key which unlocks the door to profitable farming, can we at all wonder why the whole community of farmers do not catch the knowledge simultaneously, as people awaken in the morning when the sun rises? Much less can we with propriety stigmatize and ridicule them because they do not instantly acquire full faith in book-farming. They are like people confined in utter darkness. The sun may rise and light the world, but it does not rise to them, for they cannot see it. Perhaps they may hear a rumor that somebody, somewhere, has produced a hundred bushels of Indian corn, or a thousand bushels of ruta bagas, from an acre; or that somebody has got a breed of sheep which yield 14 or 15 pounds of wool at a shearing, or which will weigh 40 or 50 pounds a quarter; but they certainly never have seen the like; they have often heard great stories told, which generally proved to be lies; they have no time to enquire out the place and go and see the fact, and they believe it as they have often believed tough stories, that is, they believe it is a lie. Such results are published, but they know nothing of the contents of the publications, or scarcely of their existence, and having no faith in them, they think it would be imprudent to spend their money in purchasing them, and, therefore, they do not buy them,—and, therefore, they know nothing about them.

But the number of scientific, or book-farmers, is now gradually, and not very slowly increasing; and like "*a candle on a bushel*, or a city set on a hill, they cannot be hid." Their unbelieving neighbors will become slowly converted, and the slowest to believe are generally the firmest in their faith when once convinced. Mankind are, in this respect, like the Malitians. When St. Paul was bitten by a viper, they had no doubt he was a murderer—they could see gallows-looks in every feature of his face; but when he had shaken off the viper and felt no harm, and they had waited some time, they "*changed their minds and said he was a god.*"

The sneers at book-farming are growing less frequent and less derisive. The spirit of improvement in agriculture seems to be rapidly awakening from its hitherto uninterrupted lethargy. Farmers who have hitherto ridiculed the aid of books, are beginning to read, and to read to advantage. Men who have hitherto despised the business of agriculture as low and beneath their attention, are now investing their funds in it, and industriously seeking such information as may enable them to conduct it to the best advantage. We shall soon have schools established to teach the principles of science in connection with the practice of the useful arts, and where science and art will be taught to flourish hand in hand, and mutually and duly to respect each other. Book-farming will then no longer be a subject of ridicule, and farmers will not only find the money they expend for books on the subject of agriculture judiciously laid out, but they will find the increase of their profits such as amply to pay for the time they spend in reading them. S. B.

The enclosed letter from Mr. Buck is entitled to peculiar notice, both on account of its contents and on account of the man who wrote it. Mr. B. is, in the most emphatical sense of the term, a practical farmer. He has a fine, healthy, and thriving flock of 800 sheep, and with excellent talents he is making every exertion to unite *science* and practice. He is a subscriber to the Farmer, and paid in advance, and has already procured one other subscriber, and will probably procure more. S. B.

Cultivation of the Ruta Baga. By D. T. Buck. [For the New-York Farmer and American Gardener's Magazine.]

Mr. Editor: As I have been in the habit of cultivating the ruta baga for several years past, formerly with but poor success, but latterly unusually good, and believing it to be one of the most valuable crops that the grower of wool or the keeper of cattle can cultivate, I beg the liberty of communicating to the public, through your paper, the result of my experiments.

I formerly have been in the practice of sowing my seed in the latter part of June, and of having the plants to grow too thick on the ground; in consequence of which, I seldom obtained at the rate of five hundred bushels per acre; the roots being but small, and the tops quite too large.

My late practice has been to sow my seed in some of the last days of May, with Robbins' patent planting machine; rows as near twenty-eight inches between as possible, planting the seed once in three or four inches; taking care, after the plants get sufficiently large, to thin them so that they may stand twelve or fourteen inches apart. In this mode of planting I have obtained from one-half acre of land 700 bushels of roots, the ground being a turf, turned under a few days previous to sowing the seed; soil, sandy loam; sowed on, soon after the seed came up, one bushel of plaster, broadcast.

The last season, I raised from four acres of land four thousand bushels of ruta bagas, the account of which stands as follows:

	Dr.	
To use of ground,		$16 00
" 4 days' ploughing & harrowing,		8 00
" 40 loads barn manure,		20 00
" 4 bushels plaster,		2 00
" Seed,		2 00
" 1 day's labor, planting,		75
" 32 do. hoeing and thinning,		24 00
" 20 do. pulling and gathering,		15 00
		$87 75
	Cr.	
By 4000 bushels ruta bagas,	$400	
" 4 acres of tops,	24	
		$424 00
		87 75
Net profit,		$336 25

In the foregoing estimate I have called the roots worth ten cents per bushel, a price I consider them worth to fatten cattle and sheep, and the tops six dollars per acre; a price below what I should feel willing to take for them. My custom has been, for some seasons past, to take my lambs from my ewes, some time in the month of September, and put them into my ruta baga field to wean. The lambs trim the tops from the roots, which causes them to thrive as fast or faster than while taking the milk from the ewes, and prepares them for the winter better by far than any other feed that I have been in the habit of trying; and they eat the tops from the roots so clean, that it supersedes the necessity of cutting with an edged tool.

When the tops are sufficiently eaten off, the roots should be pulled out of the ground and permitted to lie in the sun until the dirt is sufficiently dry to rattle off by handling. No dirt should be per-

mitted to go with the roots, if it can be avoided, for the dirt fills up the crevices and prevents the circulation of air, and causes the roots to heat and spoil. Two or three thousand bushels of roots may be thrown into a cellar together, if dry and clear from dirt, and preserved well; while one hundred bushels thrown in, in a moist state, together with dirt sufficient to prevent the circulation of air, will heat and spoil in a short time.

In raising seed, care should be taken that no cabbage, round turnip, or any other root partaking its nature, should be permitted to blossom with or near the ruta baga, lest the different plants should amalgomate, and injure the seed.

D. T. BUCK.

Lawville, April 13, 1835.

South-Down Sheep. By S. BLYDENBURGH. [For the New-York Farmer, and American Gardener's Magazine.]

Albany, May 13th, 1835.

MR. MINOR: Sir,—From what had been told me by Mr. Bement respecting the South-Down sheep, then supposed to be on their passage from England in the ship Samson, which breed of sheep I understood had been improved with great care and attention by a Mr. Rotch, in England, and after having obtained the first prize at Smithfield the year past, were now coming here to his son, I promised myself a treat in seeing them when they should come through this place; and I intended to have sketched a likeness of the best of them, if there had been any choice, and have sent it to you for the Farmer; but as ill luck would have it, I was out of the city when they came through here. But from the description given me by Mr. Bement, and from what I learned of their history by a letter to him from Mr. Francis Rotch, of ———, their owner, I am inclined to think they must be an important acquisition to the farming interest in this country. That is, to such farmers as will obtain the breed, and not suffer it to deteriorate by bad management.

I am convinced, that in a short time, the articles of wool, cotton and silk, will form the permanent basis of the farming interest in this country, and the chief staples of commerce. I believe also, that any breed of animals may be improved or deteriorated, by good or bad treatment, to an amazing degree; and from the improvements effected in the South-Down sheep, by Mr. Rotch, Sen., I think him entitled, besides his own profits, to at least the gratitude of the public, wherever his breed of sheep may extend. I think there is no quality which can enhance the value of sheep in this country more than their hardiness, in which, from Mr. Rotch's letter, and from the appearance of the sheep, as described to me by Mr. Bement, after a stormy passage of 50 days, they must be allowed to excel any other breed. Were every farmer such as Mr. F. Rotch, or his father, hardiness would not be of so much importance, as they would improve their sheep in that and every other good qualification; but as that is not the case, and as a majority of them will do well, if they get a good breed of sheep, and do not suffer them to run down, it is certainly of the first importance to introduce a breed that will bear hardship; and especially, as I understand Mr. R.'s sheep are very respectable as to the quantity and quality of the wool. I hope, therefore, you will give them due notice in the Farmer.

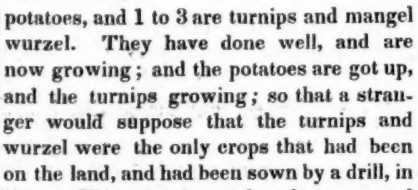
S. BLYDENBURGH.

Turnips and Mangel Wurzel between Potatoes—English Gooseberries—Seedling Vine. By M. SAUL. [For the New-York Farmer.]

MR. FLEET:

Sir,—I received your Magazine for September, and on page 269 you have given my communication on the Potato, which induces me to send you another short account.

The second planting has turned out well, and are equal, if not better produce than the early planted ones. The price is low; they are selling at about 3*s*. 10*d*. to 4*s*. 6*d*. per load; a load of potatoes weighs about 251 lbs. As it was feared potatoes would have been a bad crop, owing to some having completely failed at the first planting, I was induced on that account to try an experiment. After my potatoes had been hoed, I transplanted from the seed bed the Swede turnip and mangel wurzel, at the bottom of the furrows, (fig. 1.) 1 to 4 are



potatoes, and 1 to 3 are turnips and mangel wurzel. They have done well, and are now growing; and the potatoes are got up, and the turnips growing; so that a stranger would suppose that the turnips and wurzel were the only crops that had been on the land, and had been sown by a drill, in rows. The experiment has far surpassed my expectations, not only in the crop, but it has been the means of keeping down a great deal of weed, which would have required more time in keeping down than planting the turnip and the mangel wurzel. Now, in page 264 it is stated that the mangel wurzel requires deeper soil; perhaps it would be worth your correspondent's while to try the above experiment next season, as the furrows, *c c c*, were 18 inches deep, and my wurzel are now large and strong.

The English Gooseberry Record is just published for the present year, from which I have made the following extract, which may be of interest to your Magazine. I have selected 10 of the heaviest berries from each of the 4 classes.

RED.	dwt.	gr.	YELLOW.	dwt.	gr.
Wonderful,	27	8	Duckwing,	23	24
Lion,	26	9	Gunner,	23	11
Companion,	26		Bunker's Hill,	23	7
Briton,	25	4	Teazer,	23	
London,	24	17	Leader,	23	
Atlas,	23	15	Twister,	21	12
Guido,	23		China Orange,	21	10
Royal George,	22	21	Two-to-One,	21	8
Sir John,	22	16	Globe,	20	18
Trumpeter,	22	12	Rockwood,	20	5

GREEN.	dwt.	gr.	WHITE.	dwts.	gr.
Providence,	25	9	Eagle,	25	22
Peacock,	24		Lilly of the Valley,	23	18
Overall,	22	3	Fleur de Lis,	22	23
Troubler,	21	17	Morton Lass,	22	13
Thumper,	21	11	Tally Ho!	22	
Angler,	20	19	Delamere,	21	22
Bumper,	20	17	Ld. Valentia,	21	9
Favorite,	20	14	Ostrich,	21	5
Green Prince,	20	14	Thrasher,	21	2
True Queen,	20	12	Mad. Hammond,	21	

There are five new red seedlings going out this season, and only one yellow one; there are three green ones and three white ones.

A farmer in this neighborhood sold from his garden 350 dozen of gooseberries, at 1*s*. 4*d*. per dozen quarts. His garden is about half an acre; now, after paying the rent and labor, it left him 20*l*. clear money.

Mr. Wilmot, a nurseryman near London, is this season selling plants of his new seedling vine. It is highly spoken of, as a most excellent white grape. The price per plant is 10*s*. 6*d*.

Has Myatt's new Seedling Strawberry found its way into most of your American gardens? It is highly esteemed in our English gardens.

I shall be glad at all times to receive your Magazine, but it is of no use except the person whom you send it with to Liverpool keeps it out of the post-office. If he would, on landing, put it into the hands of a porter, to carry to the John O'Gaunt Steam Packet Office, they will settle with the porter, and it would then be forwarded to Lancaster, at a very trifling expense.

I remain yours,

M. SAUL.

Lancaster, (Eng.,) Subyard street, Oct. 22, 1834.

Elliott's Gravitating Rotary Engine.

To the Editor of the N. Y. Farmer.

April 25th, 1835.

SIR,—In your last number of the New-York Farmer, I was delighted with the invention and your description of Mr. Elliott's Gravitating Engine. Has any of them been put in operation? If so: will you have the goodness to ascertain for me the cost of one of fifty horse power. It would save much trouble if those who give you descriptions of these inventions and improvements in machinery, would always give you their cost and the address of the inventor or patentee.

I am sir, your ob't servant,

C. A. W.

In reply to the writer of the preceding letter, we can only say, that all we know of the aforesaid Engine is contained in the article alluded to; but we should be much obliged to any gentleman who will do us the favor to communicate the desired information.

We agree entirely with our correspondent in his remark, that it would save much trouble, if those furnishing descriptions of machines would furnish an account of their cost, as well as where those

in operation may be seen, the residence of the inventor, and where they can be obtained.

Cultivation of Peach Trees. By PUTNAM. [For the New-York Farmer.]

MR. EDITOR,—I have been looking to your interesting journal for several years with a lively hope of finding, through your numerous correspondents, a remedy for the diseases of our peach trees, or the cause why they are diseased to an incurable extent. I believe it is admitted by all, that seven or eight years from the planting of the seed will put an end to the trees, which is conclusive and sufficient evidence in my mind, there is an innate sickness in the very kernel that cannot be eradicated by any efforts of the nurseryman or gardener. As far as my own experience has gone, after 12 years' practice, with the aid of what I have read, seen, or heard, or could divine myself, by giving every change of situation and soil, both with plants raised at home, and procured from every section of our country, and liberally using manures and composts, and a variety of applications to the roots and trunks, with a judicious pruning in due season, and last of all, by taking the buds of young healthy trees, to appearance, and uniting them on sound plum and apricot stocks,—all, all have died in the same way; and where they were hooked on branches of the plum, and apricot, and have decayed, (which they invariably do after a few years,) I have lopped off the peach branch, and the plum and apricot stocks remain in full health and bearing to this day. This last experiment is ample and sufficient, in my opinion, to induce our nursery and seedsmen to procure a new species from a foreign climate, where the peach is known to be in great perfection. It is a fruit allowed to be beyond comparison, and can be still cultivated here in the same purity we had it five and twenty or thirty years ago. I recommend the trial from a firm belief of success with new seed. I am now proving it. In a few years I shall down with all my native peach trees, root and branch; I can have no worse fruit, and perhaps may have it restored to its primitive beauty and excellence. Yours, PUTNAM.

REMARKS.—The above did not come into the possession of S. Fleet, to whom it was addressed, until early the present month. How far friend Putnam may be correct in his supposition, I have no further data than he details to give an opinion. There is, however, a coincidence in his experience with the apricot and plum stocks, with that of Thomas Coulter, Esq. of Bedford county, Pennsylvania, in cultivating the peach. He sets them out young, at the distance of 16 feet, and cultivates the ground for two years, without any regard to wounding the trees with the harrow and plough. He cuts them down in the spring of the third year, even with the ground. They send up several vigorous sprouts, which are suffered to grow, and carefully kept from injury. He now has trees near forty years old, managed in this way. On my farm I have several vigorous trees, which have been cut down once or twice in clearing the fields of brush.

S. F.

May 19, 1835.

Ward's Improved Plough. [Communicated for the New-York Farmer, and American Gardener's Magazine.]

Vergennes, Vt., April 22d, 1835.

D. K. MINOR, Esq.: Sir,—I have this day shipped, to your address, a plough as promised in my letter of the 18th of February last. When received, I hope you will take measures to have it put to service immediately by some person who will be able and willing to judge of its qualities correctly and impartially, and who will report to you the result of his experiments, and this report I shall wait for before saying more of it.

I am now writing with my fingers benumbed with cold. Ice was formed in considerable quantities last night. The season has thus far been the most backward and cold that I remember: on the 17th inst. my gardener had prepared the ground for his early potatoes, but did not dare to plant them until the 20th, for fear the frost would destroy them, so cold had been the nights. When you need points for the plough, please inform me, and I will forward any number desired.

In haste, I remain your ob't serv't,

J. D. W.

J. D. W. is informed that his plough came safely to hand, and I have put it in the hands of Mr. Fleet, formerly the editor and proprietor of this magazine, now residing on a farm, who has furnished us with the following account of it.

WARD'S PLOUGH.—Mr. Minor: The plough manufactured and forwarded by J. D. Ward, of Vergennes, Vt., for inspection and trial, proves to be a good one. It runs level, and turns over the sod well. The castings are smooth, and the model is beautiful. I have tried it on fallow and sward ground. It is, however, too heavy, especially for hilly and rough ploughings.

Farmers consider the announcement of a new plough as no good news, unless it possesses very great and decided improvements. So many ploughs of various kinds and patterns have of late years been introduced, that farmers find it perplexing and difficult to procure shares and mouldboards to supply broken ones. So great is the competition in manufacturing ploughs, and so low are the prices, that a good, substantial, well modelled plough is not every day to be obtained; and when obtained, its limited introduction renders it very inconvenient to procure new castings. I would suggest, therefore, that those who introduce new ploughs should make them of the same sizes and numbers of those ploughs now in general use. The shares, especially, should be the same. S. F.

[For the New-York Farmer.]

"The longer the ground remains unploughed, it settles, fills the pores, and consequently displaces, and renders comparatively useless, the carbonic acid gas. To derive the greatest benefit, therefore, we must, so far as practical husbandry can accomplish it, endeavor to have it settle into the soil, and not rise above the surface."—[New-York Farmer, vol. 7, p. 102.]

MR. MINOR—The doctrine laid down in the "remarks," page 102, are so much at variance with all experience and observation, that I cannot forbear commenting on them concisely. 1st, By what means will *carbonic acid gas* be made to sink into the earth? It is much lighter than earth or water, and I believe cannot be mixed with either for any length of time. All analysis shows very little of this gas in either air or water. The $\frac{1}{1000}$ part of the bulk is found in either on analysis, obviously because it rises immediately to the surface, as in Seidlitz' powders and soda waters. I have always observed it rise in foam from water. If the writer will take a wet bladder, fill it with *carbonic acid gas*, put it in a stone crock, lay a weight on it to press out the gas, he will find the gas remain near the bottom, (being heavier than atmospheric air,) then fill the crock slowly with earth or water, and you will find the gas always ascending, and rising above the earth or water, till it is at the top of the jar, when it will be diffused by the winds in the atmosphere, and go to feed plants at a distance.

The author will remember that Van Helmont covered the earth in the box, where he planted his willow, with sheet lead, so that no water could approach it unless it was introduced by himself, yet by giving his willow distilled water for five years, it gained 119 lbs. and the earth in the box only lost three ounces. By reasoning on these suggestions, it appears to me impossible to doubt that the willow received most of its increase from the atmosphere. R. M. W.

STONE BOAT.—In the section of country where I have been most familiar with agriculture, stones have been carried from hills in carts and waggons. I find the stone boat much better, particularly when the stones are large, and the distance short. This article consists of thick plank, about five or six feet long, and two and a half wide, with a piece of timber about four or five inches square, nailed around on the upper surface. A hole is made in one end for an ox chain, or to attach a whippletree. With a crowbar and spade a man will readily carry off stones five times heavier than any he could put into a cart. It can be used on ploughed as well as on grass land.

S. F.

NEW-YORK FARMER.

JUNE 1, 1835.

WEATHER AND CROPS FOR APRIL AND MAY.—So far the spring has been very unusually backward, and unpleasantly cold. Frost, snow, and rain, have delayed farming and gardening operations nearly a month later than usual, and consequently brought the preparations for both sowing and planting so near together as render redoubled activity and exertion necessary. To give some idea of the weather, I will make a few extracts from my diary.

April 4, cold rain; 5th, violent wind, and cold rain; 6th, showery and cold; 7th, cold; 11th, planted a few kidney potatoes, some of which had been touched with the frost. At this date, May 14, I uncovered them, and found they had not sprouted the eighth of an inch. April 13th, rain; 14th, very cold wind from northwest,—so much so, that carpenters leave off work; 15th, ice more than half inch thick, and ground frozen perfectly hard; 16th, ground covered with snow; 17th, ice in the morning half inch thick, and remained unthawed in the shade throughout the day; 18th, ice thicker than the previous day—very unpleasantly cold; 19th, rain and cold. From the 20th to the 25th there were two or three working days; 25th, cold rain; 26th, cold unpleasant rain; 28th, very heavy rain, with violent wind, doing much damage; 29th, rain, and cold in the morning; May 5th, the first really pleasant and warm day we have yet had; 7th, cold and clear; 9th, cold with some rain. From the 10th to the 13th inclusive, clear, with cool mornings; 14th, a cold rain, sufficiently so, if it continues long, to injure the blossoms of fruit trees, of which peach, plum, and apple, are nearly fully and equally expanded.

From the above it will be seen, that there has been but comparatively few days suitable for working in the ground for the last six weeks. All kinds of country produce have become scarce, and command good prices. Although last year's crop of hay was heavy, yet such has been the severity of the winter, and the cold backward weather for grass, that hay has been selling in the city the early part of this month as high as $1,25 to $1,75 per 100 lbs, and oats at 68 cents per bushel; pork at 17 and $18 per barrel.

I sowed oats April 22d, 23d, and 30th, and May 1st. Those of the last sowing are, even on inferior ground, about equal in appearance to the others. May 11th and 13th sowed another lot. In ordinary seasons this last is considered late for this section of country; but such is the present season, that I think there will be no material difference in the crop.

My impression is, that there will be abundance of fruit, a great deal of pasture before the end of the month. The rains have been frequent, and we only want a few warm days to clothe the earth in an unusually rich verdure. S. F.

Westchester, May 14, 1835.

The following communication from the New-England Farmer, is, if the theory be correct, of great importance to the community. It is given with a view of eliciting further information upon the subject.

INFLUENCE OF THE MOON ON TIMBER, &c.—T. G. Fessenden, Esq.—Sir: The influence of the moon is a very unpopular subject to treat upon with some people; but that it is a necessary and valuable planet in our system, is made certain to me in various ways; one is, when I have been travelling over a bad road in the night, the light of the moon has been very beneficial, and I think that it could not be called folly in me, to make use of the light which it afforded to direct me with safety over dangerous places; and that its influences can be observed with but little more trouble in other respects, such as felling timber for durability, and some kinds of vegetation, than in the above case of travelling. Now, if the gentleman, under hints to farmers in a late number of your very useful journal, will take the trouble to cut two white pine poles to put on his fence, one a few days after the moon has changed, the other in the last quarter, if he does not let the moon know of his cutting them, she will let him know which part of his conduct is most approvable: the former will be all eaten with worms, while the latter will be sound and good, and last longer than three of the other.

I will now state some facts that have fallen under my particular notice within the last six years. In March last, six years ago, I was called to make a cider press for a man about eight miles from home. When I arrived at his house, I was shown a stick of rock maple timber to set the screws in. The tree was twenty inches in diameter; in working it I found it in a green state, bark and wood. It looked as if it had been fallen but a few months; but in conversation with him about the timber, he informed me that the tree was cut down in the last quarter of the moon in August, eighteen months before; it had lain in the woods where it was felled. I was surprised at the appearance of the timber, knowing the sugar maple to be of that species of wood that will perish as soon as any wood that I know of, cut down at certain times in the year or the moon. My employer also showed me a white maple log felled for fire wood; it was felled on the last quarter of the moon, in January, fifteen months before, that was in a perfectly green state, all but one or two feet of each end, which were dead, but perfectly sound. Eleven years before, Dr. O. Griswold, of Fryeburg, applied to me to repair a hop press for him, and I went. He had procured a red or intervale maple stick for a beam, recently felled, much the same as a white maple. He was not at home; I began to work upon it. As soon as he came home, I told him I could do better for him than to put in a new beam. He agreed with me; I left working it and repaired his old press. It was hewed, and the holes were beaten through for the screws. He said he could sell it and meet with no loss, the timber was in as good situation as it could be, being hewed and kept under his wood-shed to season for one year. The next year he sold it, and I was applied to, to set the screws in it. I went to work upon it, which was struck entirely through with the white rot. I told my employer I thought it worthless; I set the screws, and it has answered, being kept dry under cover. By looking over a file of old almanacs, I find that the latter stick was cut on the first quarter of the moon, in September, about the same time in the year, and both lying in the shade.

The influence of the moon to some of us "down east," is in other respects very evident; in our sugar making business, in the months of June and July, on the first quarter of the moon, we peel birch bark to make little tubs of, to catch the sap from the sugar trees, which comes off with much greater facility at that time of the moon than any other. For the last six years I have been making very particular observations on cutting timber for durability. Any sort of timber cut on the last quarter of the moon, or within the last ten days of her age, will endure the changes of weather as long again, and many sorts three or four times as long, as when cut on the first seven days. Our stave makers know, that timber cut on the first seven days of the moon's age, the sap part will powder-post, and be worthless.

The gentleman ship-owner who complained of the white rot in ship-timber, I will venture to say would not be troubled with it, if his timber were felled on the last ten days of the moon's age, and at a proper season of the year. Some respect ought to be paid to the season of the year; I strongly suspect that trees felled when the leaves are growing would be much more liable to the white rot, than when they are not growing, or off the trees. It has been made certain that there is very little alkali in ashes made from wood felled from the middle of May to the month of August. Potash can be made by making use of double the quantity of ashes. Common soft soap cannot be made unless by the use of quick lime, and then not certain.

Inferences.—If wood would live so much longer felled on the last quarter of the moon, I thought it would be a good time to take up young trees for transplanting, which I have done with much greater success than I ever had done before. I have cut scions and set them with like success. The above items have fallen under my particular notice, since I made the man's cider press, and although simple as the above facts seem, I place implicit confidence in them generally, and if I can add but the small sum of two mites to the Agricultural Treasury, I shall think myself well paid. The above is presented from a very humble source, and if you think it worth an insertion it is at your service.

Yours, very respectfully,

JAMES WALKER.

Fryeburg, Me., April 16, 1835.

NEW MACHINE FOR CLEANING HEMP.—It has long been a great desideratum in the manufactures of this country to discover the means of extracting the glutinous matter from hemp, and to reduce this article to a *fine fibre*, suitable to the same purposes as flax. This useful object has been generally supposed attainable, though many unsuccessful experiments had been made; but we are happy to announce, that it has at last been accomplished. Mr. Alexander Shanks, junior, flax-spinner, Arbroath, an ingenious mechanic, after considerable application, has invented a machine, composed of two metal plates of a peculiar construction, supported by springs to modulate the compressure; and the hemp in passing through these plates undergoes a friction from the action of the plates, and after passing through several rollers, it leaves the machine free of the glutinous matter and of a soft delicate fibre. When thus prepared, and heckled, it is equal to the

finest flax, and may be spun and applied to the same purposes as the last mentioned commodity. The expense attending the process of preparation is very trifling, the machine being moved by steam power (which may be borrowed from any work where there is a steam engine), and a boy may attend and feed the machine in its operations. The quantity of prepared hemp produced will of course depend upon the size of the machine. It may be mentioned, that the machine is so contrived that the friction does not cut or injure the fibre, but simply removes the glutinous matter adhering to the hemp in its original state, and reduces it to a fine soft fibre. When we consider that the price of hemp is only about half that of flax, and that the prepared hemp is equal, and for some purposes superior, to flax, the great usefulness of this invention must be manifest. We understand Mr. Shanks has secured the benefit of his useful discovery by patent, and from all that we have learned, it will be of great public advantage.

We understand that Mr. Daniel Duff, of this place, introduced a similar mode of preparing hemp, which has been practised here for a considerable time, and has been found to answer the purpose very well. We are not aware of what may be the additional advantages attending Mr. Shanks' plan, that have entitled him to take out a patent for what he deems a discovery.

After we had written the above, a gentleman called at this office with a sample of prepared hemp; which, he assures us, is superior to that prepared either by Mr. Duff or Shanks. It is manufactured by Mr. J. G. Norrie, who has bestowed no little time and trouble on the invention of his apparatus, and the article is pronounced, by judges, equal in appearance to the finest flax. This discovery has created considerable interest among the merchants and manufacturers in our town and neighborhood for some time past; and many persons have been making experiments to attain the desired object. Candor, however, compels us to state, that many of our manufacturers are of opinion, that hemp prepared in this manner loses in strength what it appears to have gained in apparent fineness of fibre.—[Dundee Courier.]

Scraps from the Note Book of a Gardener.—The following were communicated for the New-York Farmer, by Mr Saul, of Lancaster, England. S. F.

Specimens of Grasses. — It might prove of considerable advantage to farmers, if an opportunity were afforded them of viewing the best grasses in plots, each plot containing only one sort. Agricultural societies should establish farms of this kind near the principal market-towns of their districts; but most likely it would answer in a pecuniary point of view for an individual near a market-town to do the same thing, as the grass seeds obtainable from the plots would be found to be of great value, and in certain request, from the dependence that might be placed on their being good and true, if the grower were a man of character.

Excretion of Plants.—This new doctrine has a broad contradiction in the fact that many of our mountains have, year after year, and age after age, produced nothing but common ling. Now, if it were true, that plants of one family by their excrement render their places of growth unfit for them to live in, and only suitable for those of another race, why, it may be asked, do not the periodical burnings of ling on those mountains give rise to a totally distinct kind of vegetation? It may be answered, however, that the heat probably neutralizes the deleterious substance, yet to this it may be replied, that a heat, which is not found to be sufficient to destroy the ling seed on or near the surface, is not likely to have a neutralizing effect much below. In aid of the mountains, salt-water-marshes and river side land, which from their situation must certainly have been in pasture for centuries, might be brought to bear against the doctrine, but the herbage being so various there, it might be said that the plants were continually changing places, like lads and lasses in a country dance.

Colors of Flowers. — Milliners are in advance of gardeners in the definition of colors, flowers being their standards. The terms of the latter convey but a very poor idea of the colors of flowers, and the most indefinite of all is purple, which is used for describing the color of flowers nearly blue, the splendid hue of petunia phœnicea, and all the different shades betwixt that and wild thyme, which may sometimes be found with scarcely any shade of blue. The best time for distinguishing betwixt a rosy purple and red, is towards evening or in twilight, for then the slightest shade of blue is readily detected. At such time the flowers of phlox paniculata assume a ghastly hue.

[From the Farmers' Register.]

Florida Coffee, neither Okra nor Coffee.—I see by your Register for this month, a short article on the Florida coffee, the writer of which presumes it to be okra seed. But he is mistaken: it is neither okra nor coffee. Persons who have had it prepared as coffee, tell me that it does not taste much like coffee; but is, they think, richer, and that the taste is such that it is probable people would become fond of it. It was awkwardly done in the person who sent a quantity of the seed to this country for sale, that he did not send the botanical name of the plant, nor a description of it. As I have planned a little, I shall soon see what it is. Although the price of the seed was very high, $2 per pound, it seems to have excited here a great deal of curiosity, and I believe there was not seed enough for the purchasers. It was wrong also in the gentleman to have announced it as coffee, giving to understand that it was an annual species of it; for it does not follow that, because it is not coffee, it is without value, which is an objection made by some persons. But is coffee the only good thing of which a good morning and evening drink is made? Tea and chocolate are not coffee, and yet they are deservedly held in high estimation, and why should there not be another added—only call it by an appropriate name. Should, however, this plant prove worthless as a substitute for coffee, if the gentleman's account of it be correct, and I have no reason to doubt its being so, it may prove beneficial in a totally different interest. The plant is said to grow in poor land, old cultivated land, (and I presume that it grows still better in rich soils,) that it yields a very great abundance of foliage and stems, and thereby returns to the ground more than it takes from it. If it be so, we have found what I have long considered a desideratum in agriculture, viz.: a plant to turn in the ground for manure, which cattle will not eat—for, as I know by my own experience, if a plant intended for this purpose is good fodder, it will be more likely to be cut for the latter purpose, than buried for the former. I send you a few seeds of it, that you or some of your friends may try whether or not it will grow well in your state. Pray send my old friend, H. B. Croom, a few of the seeds of the Florida coffee, that he may see it is not okra. It was not till I came to this part of my letter that I found the communication was from Mr. Croom. N. Herbemont.

Columbia, S. C., April 10th, 1835.

N. B.—Okra or ocra seed is worthless as a substitute for coffee.

It has been said, and well said, by a correspondent of ours, that the prejudices of practical farmers against what has been termed "*Book* Farming" are fast wearing away. It will be well for the country when it shall be no longer a sin for a *practical farmer* to be also a man of science and extensive knowledge.

[From the Farmers' Register.]

The connexion of agriculture with other sciences, and remarks on soils and manures.

The dependence of every thing connected with human existence on agriculture, has often been remarked. That she, in her turn, should receive aid from almost every other science and art, displays beauty and harmony in the economy of nature. In this state of things, it were idle to contend with the enemies of book-farming. Knowledge, valuable to any man, is so also to the farmer. Degraded indeed would be the art, if it could gather light from no source but itself. But when philosophically drawing contributions from all quarters, and applying them to its own purposes, it shines in its full glory.

It has long been thought that the beneficent Creator had probably supplied every arable part of the world with the means of fertility. Whether this be literally true or not, we find that discoveries are continually making, calculated to produce fertility in the earth. The benefits arising from the application of calcareous manures in England and Scotland are utterly incalculable. The accounts of wonderful fertility produced in the originally barren sands in some parts of the Netherlands, chiefly by means of Dutch ashes, almost transcend belief. In our own country, we have reason to hope, that the tide-water districts will soon undergo a signal renovation by the application of shell-marl. Shall we, in the central districts, submit to the belief that these aids are denied to us, and that we must rely alone on the evanescent benefits of putrescent manures? Or shall we court the aid of mineralogy in our own region, and search for treasures in the bosom of the earth to enrich its surface? It is certain that there is but little limestone between tide-water and the mountains. Yet it is believed that this has not been sought with sufficient diligence. We must then look to other mineralogical objects, containing lime or some other fertilizing ingredients. Knowing scarcely any thing of mineralogy, I approach this subject with great diffidence, and only because none better qualified will undertake it.

The district in question is perhaps as variable in soil as any whatever. While I would not admit, that in all cases the surface of the earth receives its character from what is called *detritus*—that is, from the materials of the substratum decomposed, yet probably this is generally the case in primitive formations. In travelling from tide-water to the mountains, we cross innumerable veins of land, differing widely in texture and quality from each other, however contiguous. On examination, these stripes of land are found to contain small particles and fragments of the rocks forming their substrata—and close observation leads to the conclusion, that the character of the soil depends much on the materials of which these rocks are composed. Some of these veins have considerable breadth, and in length extend through many of our counties, as that excellent range of land passing near Charlottesville, and forming one of the finest tracts of country in the state. This range principally rests upon hornblende rock, combined with iron in such proportions, as, by the carbonizing of the latter, causes a rapid disintegration of the rock. The peculiar argillaceous loam thus produced, forms earth, which, in capacity for improvement to a certain extent, is perhaps not surpassed by any in the world.

There are innumerable other ranges of hornblende in that part of the state lying within sixty or eighty miles of the Blue Ridge. Indeed, in a great part of the country alluded to, a little of this material may be found on almost every farm. There is, however, less iron in it, apparently, and, of course, the disintegration is slow, and the rocks generally near the surface. Unlike the hornblende in the grand range first mentioned, which rises even to the mountain-tops, that, in these smaller ranges, is swallowed up in the high ridges, and its out-croppings appear principally in ravines and near the water courses; so that the ranges have their continuity broken, affording interrupted spots of fertile or improveable land, preserving a course parallel to the mountains.

Wherever this rock is found, its fertilizing properties are displayed in the soil about it. I would ascribe this to its containing lime in greater or less quantities. This has been proved by analysis, and may be inferred from clay-marl being occasionally an accompaniment of hornblende. I saw, some months past, on the land of James Wilson, Esq., of Prince Edward, a bed of marl lying upon this kind of rock—and many marly concretions adhering to the rocks, not only in the bed, but to those on the surface. I have also recently seen on the lands of Colin Stokes, Esq., of Lunenburg, a bed of marl—appearing, to the eye, the richest I have ever met with—incumbent on a very extensive bed of soft stratified hornblende. That a rock enriching its environs by disintegration, and forming marl by decomposition, would, if broken by art, improve the character of the soil on which it might be spread, cannot be doubted. But, we are assured by Professor Eaton, that it has been found by experiment to possess this property. (See Farmers' Register, vol. 1, No. 4, p. 248.) Although this substance should not be spread as manure, after pounding or otherwise comminuting, its existence in a soil is well worth observing, as it indicates such to be the very soil for improving more, especially by means of clover and plaster.

I have frequently observed gravelly hills, such as while in woods are covered chiefly with post oak and hickory, to be remarkably free land, particularly in the growth of tobacco. Much of the gravel is found on examination to be feldspar, having smooth reflecting surfaces, often inclined to a flesh color. The soil looks thin, and I never could account for its fertility, until I learned that feldspar contained both lime and potash. The latter ingredient sometimes rises as high as fourteen per cent. Potash being deliquescent, would run off with the water, as fast as the gravel decomposes, unless means are used to fix it, by combination with other manures. Every one acquainted with such land, knows how kindly it improves when properly aided.

There is a body of clay land about Buckingham Court House of great value, and particularly famous for the production of wheat. This soil seems to owe much for its vigor of constitution to the large portion of argillite, or clay slate, which enters into its composition. There is also a happy admixture of hornblende in this soil, as is evinced by the quantity of dark green or black sand observable in it. These lands are generally in the hands of those who know their value, and what to do with them; and a continued improvement is confidently expected. This, most probably, with the river bottom, will eventually form the best *gold regions* in that country. After some interruption by the high ridges, the same range (as the writer believes) crosses the Appomattox in the neighborhood of Trent's mill and Patterson's tavern. Here, however, there is a much larger proportion of fine black sand. May not what are called the Green Spring lands, in Louisa, belong also to the same range?

The lands between Cumberland Court House and the Appomattox, commonly called the Guinea lands, have often been admired as a remarkably fine specimen of sandy loam. This body of land seems to belong to the same range with that on Bush and Sandy rivers in Prince Edward, and to possess about the same characteristics. In its virgin state, it could scarcely be surpassed in its free and kindly qualities. The quantity of sand contained makes it, of course, easy to wash; and the culture of corn, oats, and tobacco—the two first great exhausters, and the last almost the entire monopolist, of manure—has reduced much of it to poverty. This range of land, whenever it becomes the subject of meliorating treatment, must make most grateful returns, and display fertility rarely seen. Its improvement has, in many instances, been judiciously attempted, with the promise of abundant reward. The peculiar adaptation of this range to the crops above mentioned, and its unsuitableness to the best growth of wheat, operate—under the miserable state of our avenues to market—as discouragements to its improvement. It is founded on slaty hornblende and feldspar, and particles and gravels of these may generally be readily found, interspersed through the soil. In some places, these minerals seem to be blended, forming what I consider to be the rock, called, by mineralogists, sienite. From the tendency of the substratum to decomposition, the soft light earth lies deep upon the rock in many places, in others, the rocks may be found near the surface.

Numerous other ranges might be pointed out, but the foregoing may suffice to show, that in our primitive formation the earth generally is *an alluvion*, that is, formed from the decomposition of the rocks below, and that its capacity for improvement depends much upon the constituent principles of these rocks. This being the case, the question might arise, on the propriety of pounding and conveying, for short distances, such rocks as seem to contain substances calculated to increase the capacity of land for improvement. At least, the earth about such rocks might be removed to weaker lands. On almost every farm, spots may be found possessing a constitution superior to the remainder, and affording strong grounds to suspect that they contain materials, which, by their chemical powers, might act beneficially on other lands. It is well known, that lime, soda, and potash, and probably magnesia, are, when properly used, excellent manures; and it is much to be desired that scientific gentlemen would search out and describe the minerals containing these manures, so that farmers may know how to avail themselves of their benefits.

Chemistry may be expected to contribute more largely to agriculture than any other science. Indeed, it runs, directly or remotely, into almost all that concerns the latter. We will, however, at present notice only its agency in the preparation and application of putrescent manures.

On this subject disputes have been endless. Some contending that manures should be thoroughly rotted, others that they should be used in a cruder state; some holding that they should be deeply buried, while others maintain that they should be applied to the surface. Manures supply the food of plants to the earth, and they improve its texture mechanically, preparing it to become a more suitable bed for their roots. The chief concern therefore—as was observed by the writer of one of the most valuable articles in the Register, whose words I cannot now quote—should be, to prepare and apply them in great abundance; and he who does this most diligently, is apt to succeed best. While this is true among us, when we devote very little attention to the subject at all, yet were all equally diligent in this matter, it would

be found that he would succeed best who exerted most skill.

Vegetable substances, when thrown into a large mass, go into fermentation, and portions of them become soluble in water. Such portions are then thought to be in the proper state for nourishing plants. If this fermentation be kept up longer, portions of them become (if I may use the expression) soluble in air; that is, they are liable to be converted into gas, and to be lost. And the whole pile, however large, would eventually be evaporated, except an inconsiderable residuum. Various expedients have been resorted to, in order to save these volatile portions, by causing them to be absorbed by light earth or other materials. It is probable, however, that this may be unnecessary, should we ever reduce this most important branch of husbandry to an *art*, with a clear understanding of its theory.

The various operations connected with the business of manuring are most commonly performed rather according to convenience, than directed by judgment. Our corn-stalks, straw, leaves, &c., are drawn together when it best suits us; they lie in the farm-pen or stable-yard, exposed to the weather, until convenience allows, or necessity compels us to drive them out. I apprehend that considerable increase might accrue in the value of our manures, were the materials of which they are made kept under shelter, until they are sufficiently impregnated with animal matter, to cause a brisk fermentation as soon as they are heaped and artificially watered, or exposed to the weather. The mass then might be equally rotted, and the vast drain of saline and other soluble matters, usually produced by drenching rains, might in a great measure be prevented. Fermentation goes on, in such heaps, as well, and perhaps with less waste, in cold weather, than in warm. Such heaps might be made once in two weeks, through the winter, and often matters might be so arranged as to render it a convenience to haul out manure as a return load, while drawing materials for making more into the farm-pen. And this, I think, would be more than a mere convenience, as I hold that the sooner manure is applied to the soil, after it is made, the better. Some expense would arise in erecting suitable shelters, but this would soon be amply repaid in the increase in quantity and quality of the manure, and comfort and consequent improvement of the stock. In a well littered farm-pen, exposed through the winter to the weather, much of the richer parts must rise, even in cold weather, to the gaseous fermentation, and be wasted. The same litter, sheltered, would not ferment, for lack of moisture, during the short time allowed for its impregnation with animal matter. Indeed, it is doubted, whether—should it be necessary—it might not be kept free from fermentation through the whole winter. I think it also certain, that, while not chemically fermenting, its loss would be trivial.

Much has been said on the subject of applying manure to land, and many directions given about heaping it and carefully covering the piles with earth, to save the escaping gases. After all, I doubt whether it is not best to spread it at once over the surface. While kept in heaps, chemical action must go on. This produces an evolution of gas; and though much of this may be caught by the covering of earth, yet this is taken from the heap below, and leaves it weaker. If, after sufficiently rotting the manure at the farm-pen or stable, it be equally spread over the surface, little or no chemical action can occur. It is true the sun and air speedily dry the water out of it. But this is very different from the chemical fermentation employed in rotting it, while in heaps. After it once gets dry, it can lose no more, not even of moisture; and when it rains, its soluble matters go into the earth, where they ought to be, mouldering and mellowing the clods, and preparing the land to produce a fine crop. Who has not seen, after a rich dressing of manure has been hastily buried under a poor clay, the clods remaining obdurate, with great detriment to the crop, throughout the season? And who has not seen a summer cow-pen, which has not been ploughed till the next spring, surpass in crop an adjoining one, which was well turned over in the fall?* This experiment, I have repeatedly made; and have fancied that the advantage gained was protracted beyond the first year, by the kindly condition in which this treatment left the soil—especially, when the land has been in a short time laid down in grass. But, even if the benefit lasted but for one year, the speedy return for such an investment of manure would be worth considering. It is, however, granted that no harm can result from a deep burial of manure, in a loam sufficiently rich and mellow to nourish the young plants, until their roots can strike down to it. But, even here, it might be doubted, whether benefit might not be derived from exposing the manure to one or two rains before ploughing it in. Some of the best practical farmers in Virginia have adopted the plan of top-dressing, not only with prepared manures, but also with fresh straw—the soluble portions of which are readily yielded to water. And the practice may reasonably be defended, until it can be demonstrated that the sun and air exert a material chemical action on a thin stratum of manure.

A proposition in agriculture has been too fully demonstrated, to need an attempt at confirmation here, which the improving farmer should always bear in mind. It is this†—that a soil cannot, by the best rotation of crops, aided only by the use of putrescent manures, be permanently kept at a grade of fertility above its natural standard, or that which it held before clearing—or, in other words, that every soil has its natural grade, as regards its capacity for improvement, and that this grade depends upon its approach to that happy combination of sand, clay, and lime,* which constitutes the perfection of a soil. An attention to this doctrine will lead us to apply putrescent manures largely, only to those soils which seem to have a large capacity for retaining them, while we endeavor to keep the weaker soils up to their standard of fertility, by a mild rotation, and occasional meliorating crops, using diligently whatever opportunity may offer itself, for elevating their grade, by the use of permanent manures.

The foregoing remarks are offered, with a sincere conviction of the importance of the subjects, and with the hope that more experience, talent, and science, may be brought to bear upon them.

M. N.

[From the Vergennes Gazette.]

Essay of Mr. A. H. Barnum, on the Culture of Potatoes.

Mr. Blaisdell: In your paper of the 21st December last, I published the result of some experiments made during the season, in growing Potatoes. The quantity produced was such as to cause considerable excitement with agriculturists, and I have been called on by public journals and private letters, from Maine to Georgia, and from Quebec to Malden, for information respecting my manner of cultivating them. The respectability of the sources from which these inquiries emanate, and the very polite and flattering terms in which they are expressed, forbid the idea of refusal. I therefore embrace the first opportunity my health admits, of attempting to gratify their wishes, to the extent of my limited powers.

From the remarks of some of my correspondents I am inclined to believe they misconstrued the statement made in the publication above alluded to. By reference to the statement it will be found that I did not say, or expect to be understood by field culture, that 1,800 bushels of Potatoes could be raised upon an acre. I then said as I now say and believe, that 1,000 bushels can be grown upon a single acre at less than half the expense and labor they are produced from four in the common manner of culture.

Preparation for planting.—Whatever soil may be selected for this purpose, to insure a large crop, it should be highly manured with compost decomposed vegetables, or barn-yard manure, the latter I consider preferable when it can be obtained with convenience; if raw or coarse be made use of, it should be spread immediately before the first ploughing, on

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* The attention of the writer was drawn to the subject of surface manuring, many years ago, by something written by one of the venerated compeers of Col. Taylor. Since writing the article above, I have received my March number of the Register, and find, if I may judge from the initials, and from the well known cheery style, something on the same subject from the same hand. May the periodical numbers of the work long be enlivened by the effusions of this writer, who has devoted so much of his life to the service of his country!

† See "Essay on Calcareous Manures." The book being lent out, I cannot quote verbatim.

* That lime exists in every soil capable of production, either in a combined or free state, has been fully proved. It is believed, however, that those soils containing a little lime in a free state, and ready for combination with putrescent manures, are best.

the same day, to prevent the evaporation of its best qualities, which will rapidly depart if left exposed to the sun and atmosphere.

The first should be deep ploughed, and may be done as early as suits the convenience of the cultivator. If a stiff marl or clay soil, it would be well to have it ploughed late in the fall previous to planting: where compost or other substances not liable to fermentation are intended as a manure, it is better the spreading should be omitted until just before the last ploughing, after which it should be thoroughly harrowed, fine and smooth as possible; then take a narrow light cultivator, or small plough, calculated for turning a deep narrow furrow; with this instrument lay your land in drills, twenty inches asunder and four inches in depth, running north and south if practicable, to admit the rays of the sun to strike the plant equally on both sides; put into the bottom of the furrows or drills about two inches of well rotted barn-yard manure or its equivalent, then drop your potatoes, if of the common size, or what is more important, that they contain about the usual quantity of eyes,—if more, they should be cut, to prevent too many stalks shooting up together; put a single potato in the drills or trenches 10 inches apart, the first should remain uncovered until the second one is deposited, to place them diagonally in the drills, which will afford more space between the potatoes one way, than if laid at right angles in the rows. The covering may be performed with a hoe, first hauling in the furrow raised on each side the drill, then carefully take from the centre of the space the soil to finish the covering to the depth of three and a half or four inches; by taking the earth from the centre of the space on either side to the width of three inches, it will leave a drain of six inches in the centre of the space, and a hill of fourteen inches in width, gently descending from the drill to the drain; the width and depth of the drill will be sufficient to protect the plant against any injurious effects of a scorching sun or drenching drain. The drains in the centre will at all times be found sufficient to admit the surplus water to pass off. I am not at all tenacious about the instrument to make use of for opening the trenches to receive the manure and potatoes; this work should be well done, and may be performed with a common hoe, with much uniformity and accuracy, by stretching a line to direct the operation; it is true that the labor cannot be performed with the same facility as with a horse, but it can be better done, and I think at less expense, taking into consideration the labor of the man to hold, the boy to ride, and the horse to draw the machine.

Dressing, Hoeing, &c.—When the plant makes its appearance above the surface, the following mixture may be used: for each acre take one bushel of *plaster* and two bushels good *ashes*, and sow it broad-cast as even as possible; a moist day is preferable for this operation, for want of it, a still evening will do.

I consider this mixture decidedly more beneficial and much safer than plaster or ashes alone. The alkali and nitre contained in the ashes loses none of its fertilizing qualities in a moist season, and the invaluable properties of the *plaster* are fully developed in a dry one, by decomposing the atmosphere and retaining to a much later period in the morning the moisture of the evening dews. There are but few plants in our country that receive so great a share of their nourishment from the atmosphere as the potato. The time for dressing or hoeing will be found difficult to describe, and must be left to the judgment of the cultivator; it should however, in all climates, be done as early as the first buds for blossoms make their appearance.

The operation of hilling should be performed once and *once only* during the season; if repeated after the potato is formed it will cause young shoots to spring up, which retards the growth of the potato and diminishes its size. If weeds spring up at any time, they should be kept down by the hand or hoe, which can be done without disturbing the growing stalk.

My manner of *hoeing or hilling* is not to haul in the earth from the space between the hills or rows, but to bring on fresh earth sufficient to raise the hill around the plant one and a half or two inches: in a wet season the lesser quantity will be sufficient, in a dry one the larger will not be found too much. The substance for this purpose may consist of the scrapings of ditches or filthy streets, the earth from a barn-yard that requires levelling; where convenient it may be taken from swamps, marshes, the beds and banks of rivers or small sluggish streams at low water. If planted on a clay soil, fresh loam taken at any depth from the surface, even if it partakes largely of fine sand, will be found an excellent top dressing. If planted on a loamy soil, the earth taken from clay-pits, clay or slaty soil, will answer a valuable purpose; in fact, there are but few farms in the country but what may be furnished with some suitable substance for top dressing if sought for. The hoeing and hilling may be performed with facility by the aid of a horse and cart, the horse travelling in the centre of a space between the drills, the cart wheels occupying the two adjoining ones, thereby avoiding any disturbance or injury to the growing plants. The time for collecting the top dressing may be regulated by the farmer's own convenience, the earlier the better, deposited in large piles in or near the potato field, in the most suitable place for distribution.

I have frequently tried bed-planting, (or planting in beds,) with uniform success. On moist lands in a stiff or heavy soil, I consider it preferable to any other mode; to do it properly, lay your land in beds of from ten to twenty feet in width, raised in the centre with a plough by back furrowing, after the last harrowing, which should be thoroughly done, is performed, and left *crowning* with a gradual descent from the centre to the alleys; the proper width and height of the beds must depend on the situation of the land, and may be regulated by the judgment of the cultivator. In clearing the alleys, which need not exceed sixteen or eighteen inches in width, the laborer should stretch two lines the proper distance on each side the alley, and throw upon the beds with a shovel the earth necessary to be removed.

The use of lines may be by some considered a useless expenditure of labor; not so,—the regularity and neatness of appearance will be an abundant remuneration for the trifling time occupied in stretching the lines.

After the land is prepared for planting, strike it out in drills or trenches as before directed, twelve inches asunder; in these drills, drop the potatoes twelve inches apart (diagonally,) to be covered, hoed, dressed and managed in the same manner as in field culture, with the exception of making a drain in the spaces between the drills, which is unnecessary and should be avoided. In filling the trenches, dressing, &c. the horse-cart must be dispensed with, and a hand-cart or wheel-barrow substituted.

In recommending the drills north and south in field planting, I did not wish to be understood that other more valuable considerations should be abandoned for this practice; it is desirable it should be so, where the level or moderate descent of the land will admit of it, but it too steep and liable to wash, care should be taken to avoid this evil, by running the drills in such direction as may be required to maintain a proper descent, even if it should be necessary to run them in curved lines, or wind around a steep hill, to preserve the required descent to admit the surplus water to pass off.

In communicating my experiments to some of my neighboring farmers, who are always in a hurry and run over with the plough two acres of land in half the time required to do justice to one, their reply generally is, that my tedious mode of cultivation has too much *piddling* and small labor for their patience, and persist in their accustomed manner of half ploughing, half planting and half hoeing, five acres of good land, and not obtain more potatoes than one properly cultivated would produce, thereby losing half their labor and seed, besides the use of four acres of their best land, which might be converted to other valuable purposes.

I should think that intelligent farmers by a little reflection would perceive the folly of pursuing the usual wasteful practice of planting potatoes in rows in hills four feet asunder, leaving four fifths of their land unimproved and subject to a rapid waste of its most fertilizing qualities, by being nakedly exposed to the washing of drench-rains and the evaporation of the atmosphere; and after all their labor, may consider themselves fortunate if they obtain 200 bushels to the acre, which exceeds the average yield in this section of country. By pursuing the course I have recommended, in ordinary seasons, on a good soil you may rationally calculate on

a crop of from 800 to 1200 bushels to the acre.

To such farmers as complain of my tedious and piddling mode of culture, I have only to remark, if they will piddle their land in the same manner, even if they waste half their crop, they will find themselves richly rewarded for their whole labor, in the benefits they derive by this preparation in succeeding crops. I would also add, that I believe it is generally acknowledged, that rotation in most kinds of crops is desirable, but in none more necessary than in potatoes; even a second crop on the same ground well prepared will be found to degenerate in quality and quantity.

Location.—The district of country in North America best adapted to their growth, taking into consideration quantity and quality, is situated between the 2d and 10th degrees of east longitude (from Washington), and between the 42d and 50th degrees of north latitude; they are grown to a very considerable extent much farther north, south and west, but in diminished quantities and inferior qualities.

Soil.—A rich marl or clay is perhaps the most productive; a strong moist loamy soil (the newer or less it has been cultivated the better) is the most convenient and least expensive soil to grow them on; most soils common to our country will produce them in great abundance and perfection; the more rapid the growth the better the quality.

Season for planting.—In this respect they are a most accommodating crop, allowing the farmer in the southern and central part of the designated district 20 or 30 days to perform the operation; the particular time depends in a very considerable degree upon the climate: in the region of my residence (the 44th degree of north latitude) they may be planted from the 10th of May to the 16th of June. At the extreme north of the described limits less latitude is afforded for seed time and harvest. The good husbandman in that climate should make all practicable preparation for his crop in the fall, and plant as early in the spring as the ground is sufficiently dry and warm: here the growth is extremely rapid, not requiring more than from 90 to 110 days to perfect it; the quantity will not be quite so great as with us, but superior in quality.

Kind of seed to be planted.—This is a question of too much difficulty for me to answer satisfactorily to myself, or instructive to the numerous inquiries of my correspondents; the kind and qualities in a single neighborhood are too numerous, and their names too local and variable, to admit of an intelligent reply.

The female of this plant (like most of her sex) is so jealous of her rights and privileges, and so tenacious of cultivating a friendly intercourse, and connection with her neighbors, that the blossoms in fields at 200 yards, distance, planted of different kinds of seed, are frequently found contributing liberally with each other (by the aid of a gentle breeze) a portion of their generating *Farina*, which is generously received and kindly nourished; the product of this connection strongly partaking of the properties and appearance of both, many of them in apparent equal parts: plant this mixture a few years, in a place of safety, and it will be found that the weaker plant will gradually yield to the stronger, until the one most productive and best suited to the climate will be produced in its original and unadulterated purity. The fact goes far in satisfying me of the cause of our frequent disappointment in not finding seed at all times producing its kind. We have abundant means, with a little care and patience, of supplying ourselves with every variety of potatoes, the growth of which is adapted to our climate.

The wise Provider of all good things has kindly furnished us with the means of providing ourselves with innumerable kinds and qualities of this vegetable. The ripe balls or seeds from a single stalk will produce, by three seasons' planting, almost countless varieties of every color, shape, size and quality, which the country has heretofore produced, and something new, in addition.

The first season's planting they will be small and tender, the second larger, and the third of suitable size for field planting.

The only answer I can give to the inquiry for the right kind of seed, is to recommend to the farmer that kind to be procured in the vicinity most productive, except a small quantity, if he possesses them, of a superior quality, for table use. In changing, seed, which will occasionally be found beneficial if removed from any considerable distance, should be taken from the north; the growth will be more rapid, consequently the quality better, and in southern climates the quantity greater for the first season, at least.

Time for gathering.—This ought to be done when the potato is ripe, and *not before*, the idea so generally entertained that an early frost, which nips the top and destroys the vine, prevents the further growth of the potato, is a mistaken one and ought to be exploded: on the contrary, if it has not at this time attained its full size and weight, it grows more rapidly, the nourishment required for sustaining the top is transferred to the root. From a knowledge of this fact, satisfactorily tested, I am inclined to believe that by clipping the bushy part of the top with a scythe or other instrument, after the ball has attained its full size, the crop would be greatly benefitted by the operation. I have made a few experiments of this kind, all tending to confirm my belief, but not sufficient to warrant me in making the broad unqualified assertion of the positive correctness of my opinion. I hope agriculturists in different sections of the country will lend a helping hand to aid in testing the correctness or incorrectness of my doctrine in this particular. The green tops are excellent food for cattle or swine; if left on the field, will produce no injury, but serve to enrich the soil.

Housing and Wintering.—The erroneous practice pursued by our best farmers generally, induces me to state the manner I have pursued for years with unvaried success. To preserve 5 or 600 bushels, I make a box or bin four feet wide, three feet high, and sufficient length to contain the required quantity, have the joints well fastened and made as tight as possible, put it into the cellar on skids, raising it three or four inches from the cellar bottom; if the potatoes are intended to be taken out at different times, two or three partitions should be put in crosswise of the bin, to prevent such as are not required for immediete use from exposure to atmosphere. After this preparation is completed, the next operation is gathering and housing them. Here I must again dissent from the usual practice of farmers generally; instead of leaving them in the sun and wind to dry, after digging, in small parcels, in carts or heaps, they should be immediately covered with the tops or something else, even if they remain in the field but a few hours; this destructive practice, I think, must be entirely attributable to want of reflection; it is the sole cause which produces the evil so much complained of, by us called the watery potato, by the Irish the winded potato, destroying not only the flavor, but a great portion of its nutriment. In fact, sun, wind, and rain, are as destructive to a new dug potato, as moon-light is to a fresh caught fish. When your potatoes are removed to the cellar, put into the bottom of the bin two inches of fresh earth, then fill one apartment with potatoes, within three or four inches of the top; immediately cover it with tough grass turf, cut up with the spade a little dove-tailing, to the thickness of three or four inches, cover them with the turf, grass side up, packed close and pounded down with a wooden mall, to exclude as much air as possible. In this manner, in a cellar of suitable temperature, they may be kept fresh and good for a year, without germinating. No danger is to be apprehended of having too much dirt stick to the potatoes, it assists in preserving them; an occasional sprinkling of fresh earth amongst them will be found serviceable.

Potatoes for food.—Their uses for man or beast are too well understood to require any remarks of mine, on the subject. This most valuable of plants in the whole vegetable kingdom undoubtedly affords more healthy nourishment to that portion of the human family residing in Europe and America, than that of any other vegetable; perhaps it is safe to say, double the amount, and at less than half the expense.

Potatoes for Bread.—By adding to wheat or rye flour, one fourth or one third part of the meal of potatoes, the quality of the bread will be improved as a healthy food, and the flavor equally palatable. It is easy of digestion, sets kindly on the most delicate stomach, is highly beneficial in dyspeptic complaints, a disease (by the bye) more common than necessary in our country, and generally originating from idleness; in some cases, too close application to study—but more generally by high living, want of proper exercise of body and mind, or too great indulgence in hypochondrical reflections. I am no doctor, but will

guarantee a cure gratis, to such as have mind, nerve, and resolution, enough to follow my prescription.*

The disease is of rare occurrence amongst the laboring class in Ireland, that live on potatoes and salt six days in a week, and is equally so amongst the peasantry of Canada.

The manner of making this bread is simple and easy; boil good potatoes properly, drain off the water as soon as they have boiled sufficiently, let them remain in the warm kettle to dry, take off the skin, put them in a mortar and pound the meal fine, to which add a little fine salt, previous to putting in the yeast to raise the bread, mix the potato meal thoroughly with the flour, afterwards pursue the usual process of making bread from flour. Its general use should be encouraged by the government and people. In addition to the benefits produced on the health of the consumer, in point of economy, it will be found an immense saving in the expense of bread stuff, a saving worthy of the consideration of the American people, a saving equal to the whole amount and cost of the bread consumed by 3,000,000 of her population, a saving in every five years, to each populous State, sufficient to defray the expense of constructing a Railroad in each, from one extremity to the other. Is it not then the duty of every well-wisher to the prosperity and happiness of the human family, to encourage the culture and more general use of the potato, by precept and example; it is not only useful in bread, but in many cases an excellent substitute for it; with a beef steak in the morning, a fine baked potato will be found a comfortable substitute for a slice of bread.

To such as are fond of that most nutritious liquid which first gave to their infant bodies strength and vigor, a good boiled or baked potato may be satisfactorily substituted for a slice of bread in a bowl of milk.

In fact its uses may be increased ten fold without infringing on the rights and privileges of the most fastidious epicure, or the strong propensities of the fashionable gormandizer, who worships his BELLY at the expense of his TOES.

In conclusion, I have only to add, that I am fully aware my communication will be considered by many readers who take the trouble to wade through it, unnecessarily long and tedious; the only apology I have to urge, is a want of knowledge of proper language to express my ideas with brevity, a wish to answer the many minute inquiries of my numerous correspondents, and the strong desire I have to cause two potatoes to grow this season where one did last.

I hope the purity of my intentions will protect me against the malignant shafts of the merciless critic. He is at full liberty to attack the matter, but spare the manner. I beg of him not to forget to remember that many of us who hoe potatoes most of our days, and sleep most of our nights, have very little time to attend schools, to learn and expose our neighbors' faults, or forget and hide our own.

*Here our friend Barnum has mistaken effect for cause.

Should the foregoing remarks (which are as applicable to many other crops as that of potatoes) have the effect to improve the culture of the earth beneficially, to any portion of my fellow citizens, I shall consider myself, even this in my ill state of health, abundantly remunerated for my feeble attempts at improvement.

A. W. BARNUM.

Vergennes, March 13, 1835.

[From the New-England Farmer.]

CULTURE OF CORN.—Mr. Fessenden: About two years since I gave you some account of two experiments in planting corn. The result of one went to show that our cornfields do not usually have a sufficient stock of plants; and the other, that nothing is gained by giving the hills a greater distance one way than the other. On the latter point, perhaps the practice of farmers in this vicinity is different from that of others. Here we see fields planted, with rows from two and a half to three and a half feet distant, and hills from four to six or seven feet distant in the row, thereby making the distance nearly, and in some instances more than double one way, that it is the other. The origin or reason of this practice, I have never learned, but see no objection to it, except the additional labor necessary in cultivation. I believe it is moderately getting out of use. Respecting the first, that of stocking the ground, I have since made further experiments both in regard to distance between hills, and number of stalks in a hill, and if you think its details may be useful or interesting to your readers, it is at your service.

Corn is usually planted here in hills, and the general impression among farmers, I believe, is, that without reference to the distance between hills, it is a matter of little consequence whether there be three or four stalks in a hill. Perhaps the majority prefer four stalks, yet some good farmers give the preference to three, and three are probably as many as our cornfields will usually average, if the missing hills are taken into the account.

The ground selected for the experiment was a light sandy loam, that had been in pasture perhaps thirty years. After ploughing and rolling, about twenty cart-buck loads to the acre of coarse barn-yard manure were spread on the furrows and harrowed in, Five parcels of ground, of three rows each, were then laid out at the several distances of 2 feet 6 inches, 2 ft. 9 in., 3 feet, 3 ft. 3 in., and 3 feet 6 inches, each parcel separated by an intermediate row, to prevent the necessity of resorting to an average on the outside rows, in calculating the product of the ground per acre. The distance between the hills in the row was, in all cases, equal to the distance between the rows of the same parcel; and in each parcel one row was to have three, one to have four, and the other to have five stalks in a hill. The rows, about twelve rods in length, were laid out, and the hills marked off, at exact distances, with little trouble, by means of a simply constructed gauge. The corn planted was an early twelve rowed kind, called the Golden Sioux. Six to eight kernels were put in a hill, and the stalks afterwards pulled out to the requisite number; in all cases leaving the best ones standing, which gave some advantage in the selection to the hills of smallest number. The intermediate rows and those on either side had generally about four or five stalks in a hill, with hills at distances to correspond nearly with their neighbors. In the selection of soil, manuring and cultivation, all were supposed to have an equal chance. The ground was kept level, and sowed with grass seed the last time of hoeing.

When harvested, the produce of each row was carefully weighed in the field, and noted down immediately, and seventy pounds of dry well ripened ears estimated to make a bushel of shelled corn.

The following table will show the order in which the rows were planted, and perhaps will exhibit the method pursued, and the result, better than can be done by description; and also afford opportunity to detect any error that may have been admitted in the estimates.

No.	Dis.	Ground to each hill.	Hills per acre.	Hills in row.	Stalks per hill.	Produce of row.	Produce of hill.	Shelled corn per acre.
1	2 ft. 6 in.	6 ft. 3 in.	6970	80	3	47 lb. 9 oz.	6¾ dms.	54 b. 44 p.
2	"	"	"	"	4	49	9	67
3	"	"	"	"	5	52¼	10½	74
4	Intermediate or dividing row.							
5	2 ft. 9 in.	7 ft. 6¾ in.	5760	72	3	48¼	10	51 56
6	"	"	"	"	4	53	11	56 41
7	"	"	"	"	5	55	12	59 48
8	Intermediate.							
9	3 ft.	9 ft.	4840	66	3	48	11	46 70
10	"	"	"	"	4	54¼	13	53 20
11	"	"	"	"	5	56	13	54 56
12	Intermediate.							
13	3 ft. 3 in.	10 ft. 6¾ in.	4124	60	3	43	11	29 31
14	"	"	"	"	4	48¼	12	44 34
15	"	"	"	"	5	55	14	50 30
16	Intermediate.							
17	3 ft. 6 in.	12 ft. 3 in.	3556	57	3	46	12	35 18
18	"	"	"	"	4	55	15	45 56
19	"	"	"	"	5	56	15	46 43

It will be seen in every case that the hills of three stalks produced less than those of four, and those of four less than those of five. In this view it may be considered as five experiments, all giving the same result, notwithstanding some of the hills occupied but about half the quantity of ground usually given them in our field culture. The average of five rows, one from each parcel, is as follows, viz.

Three stalks in a hill, 46 bushels 14 lbs. per acre.

Four stalks in a hill, 52 bushels 42 lbs. per acre.

Five stalks in a hill, 54 bushels 20 lbs. per acre.

The difference of average between three and five stalks is 8 bushels 6 lbs. per acre.

It will be seen, also, that in every instance but one, or eleven times in twelve, diminishing the distance between the hills

increased the product of the ground. The average of each parcel is as follows, viz.:

Three feet six inches between hills gave 44 bushels 14 lbs. per acre.

Three feet three inches, 44 bushels 57 lbs. per acre.

Three feet, 51 bushels 49 lbs. per acre.

Two feet nine inches, 55 bushels 45 lbs. per acre.

Two feet six inches, 57 bushels 36 lbs. per acre.

The difference of product between the average of hills at two feet six inches, and that of hills at three feet six inches, is 13 bushels 22 lbs. per acre.

Row No. 17 had the least number of stalks per acre and gave the smallest product, 38 bushels 18 lbs. The number of stalks in this row per acre (for there was not one missing) was probably equal to the number usually standing in our fields, and the product would be considered, in common seasons, a fair crop for land and manure of like quantity and quality. Row No. 3 had the largest number of stalks per acre, and gave the largest product, viz., 60 bushels 74 lbs. This difference appears to have been made by the difference in the number of stalks, as is evident from the fact that the produce of the other thirteen rows varied from these, and from each other in different degrees, somewhat according to the number of stalks, and distance of hills, with one exception. No. 14, with hills (of four stalks) at three feet three inches distant, gave 1 bushel 22 pounds less than No. 18 with hills (of four stalks) at three feet six inches distance. This exception to the general result is a case in point, showing that the same crop is not always, and in all cases, to be expected even from the same soil, season, and mode of culture; and gives evidence, if such be wanted, that a single experiment should not be relied upon as fully establishing any rule or method of cultivation.

Row No. 17 gave a product equal to 22 bushels 56 pounds per acre more than row No. 3, or a gain of about sixty per cent. apparently by increasing the number of plants per acre. Perhaps a part of the gain, however, is only in appearance. Most likely a hill with five stalks would extend its roots in search of food somewhat farther than a hill with four or three stalks, and if so, among weaker neighbors, it would occupy more than its allotted portion of ground, while they would occupy less than theirs. If this be a cause of part of the difference, it may be difficult to tell how much deduction should be made, (though probably whatever is made should be from the 8 bushels 6 pounds difference of product between three and five stalks,) but having the facts before you, Mr. Editor, you or your readers can guess as well as myself whether, after making a liberal allowance for that or any other supposable cause, there was not a large and substantial gain by increasing the number of stalks per acre.

That the gain would have been as great on all other soils, I am by no means prepared to say; indeed, on many, I am confident it would not. I apprehend it is only rich and good soil, well adapted to the growth of corn, that will bear thick planting, and even then very much depends on the *kind* of corn; that of larger growth must have more distance. Cold land, perhaps, will not bear the shade of thick planting, and poor light land most certainly will not bear the exhaustion. Thick planted corn also suffers soonest and severest by drought.

I have stated the case, perhaps with more minuteness than may be thought necessary, and shall leave it with you, Mr. Editor, to strike out all or any part, as you shall think best.

During the past year much has been said in the Farmer, by way of objection to large corn cobs—a popular objection, surely; but will you tell us, Mr. Editor, why a large cob is not as good as a small one; or, what is about the same thing, why a long one is not as good as a short one, and whether we may not as well expect to raise beef without bones, as corn without cobs? I have supposed that the larger and longer the ears were the better, provided the corn was of good quality, and adapted to the seasons and soil; with these qualifications, far from having seen them too large, I have seldom thought them large enough, and should be very unwilling to assign them a limit. Indeed, I see not why the objections that can be made to large ears of corn should not be made to large ears of rye or wheat, or to the large long frames of "Improved Short Horns." But I may be mistaken; I may misapprehend the subject.

Yours respectfully,

WILLIAM CLARK, JR.

Northampton, May, 1835.

By the Editor.—The above article cannot fail to prove of great utility to the practical farmer, and we think that Mr. Clark has rendered important services to the community of cultivators by making and publishing the results of the experiments detailed above.

DUCKS' EGGS UNDER HENS.—Much of the success in rural husbandry depends on observing and imitating nature. This is illustrated in the duck and the hen. When the former leaves her nest, she generally makes her way to some water to quench her thirst, and to cool and wash herself. Consequently on returning to her nest, her feathers are moist, and the eggs become more or less wet. A lady, who has had considerable experience in hatching ducks under hens, says she found them to hatch better for wetting them with a cloth whenever the hen was off in quest of food. This she supposes has a tendency to soften the shell, and to enable the duckling more easily to peck a hole. The eggs should be handled as little as possible—a wet cloth merely drawn over them; the sitting fowl herself turns them sufficiently often.

S. F.

April 16, 1835.

The following article from the Southern Agriculturist, although addressed to Planters, is equally applicable to Farmers, and it is therefore laid before them.

On the facility of making Experiments, and exactness necessary to render them profitable.

To the Editor of the Southern Agriculturist.

SIR: It is so long since I wrote my first article, (in which I promised to write again,) that in all probability all that I then said has been forgotten. It was my intention to have followed up that article with some other suggestions, but, as I then said, I only write when the spirit moves me; and other occupations have kept my mind so engaged that I have scarce ever thought of my promise; but, as I have some things yet to say, I will avail myself of a little time I have to spare, to make one or two observations relative to what strikes me as deserving of attention by our planters.

I have already made some remarks on the just apportionment of crops, and of labor on plantations,* and have endeavored to point out the errors and the remedy; whether I have succeeded or not is for those to whom these remarks were addressed to determine. The next subject I shall call the attention of our planters to, is the *want of proper attention to and exactness in making experiments.* There are few of the intelligent portion of our agriculturists who have it not in their power annually to make several experiments, without interfering with the regular crops, in such a manner as to be worthy of notice; and by many, such experiments are made, but, owing to a want of proper attention to them and exactness in making and ascertaining the result, they prove of no avail.

That experiments can be made on a portion of a crop, without materially affecting the product of the whole, can admit of no doubt. To make myself better understood, I will suppose that a planter wishes to ascertain *whether the cutting off of the tops of his corn lessens the product.* Let him select a quarter of an acre, or even an eighth, and let him divide this into as many portions as he desires to make trials; the first portion to be cut when the silk has dried, another portion when the ear appears fuller and turning yellow, &c. &c. These he can compare with portions of the like size left for that purpose untouched, or with some part of the main crop growing in the neighborhood.

Again, should he wish to try the effect of a particular manure, or of several, or the application of them in different modes, how easy is it for him to select a spot in any part of his field; the only thing to be attended to, will be that all of that part experimented upon is of the same quality, and is situated alike as to moisture or dryness. The culture should be the same as that bestowed on the rest of the crop, and thus a fair experiment might be made with a very trifling additional trou-

* See Southern Agriculturist, vol. vii. p. 402.

ble, and the total product of the crop not materially affected by either the success or failure of the experiment; whilst at the same time much valuable information would be gained.

Again, should a planter wish to gain information relative to the *potato* crop, (and there are many points of practice which it is highly desirable to determine,) let him select contiguous rows on which to make his experiment. Thus, in one year, a planter has it in his power to make, at least, a dozen experiments, without putting himself to much inconvenience, and these experiments could be repeated every year until the result was fully established; for it must be borne in mind, that one experiment does not establish any thing—the time of planting, the season, or even the quality of the soil, may vary the result. It is not, therefore, until after several experiments have fully satisfied him of the result, that a planter should vary his ordinary practice, in order to conform to what his experiments have proved to be better.

But there are numbers of planters, who make annually such experiments as I have detailed above, who are no wiser at the termination than they were at the commencement; nay, further, are sometimes misled by them; and this will ever be the case as long as they are conducted in the *helter-skelter* manner in which but too often they are. What possible good can any one expect to derive from an experiment, unless he is exact in making it, and recording all the particulars relative to it. But, unfortunately, few attend to this, and if you inquire of them the result, you will discover very often that they have but a very indefinite idea about the whole matter, and have not satisfied themselves whether it ought to be adopted or rejected; and on the whole, think it best to stick to the old plan, as they have done tolerably well hitherto. Now, if it be worth while making an experiment at all, it is certainly worth making it as it should be, or there is actually a loss incurred; inasmuch as some little additional trouble must be taken, and there are the many visits which are made to it, and the perplexity it occasions in consequence of nothing satisfactory being ascertained. Now it is quite easy for a planter to avoid all this, and to get well paid for his labor. Let him keep a small memorandum book in his pocket, in which let him note every thing which is done, and the appearance of the different parcels, when compared with each other and the general crop; let him also note his opinions at the moment, which he can afterwards correct, should he find that he was in error; this noting down the impressions of the moment is of more importance than most planters attach to it. Let him, moreover, be very particular in detailing the work done, the time when, and the manner it was done; and, at the conclusion, let him be extremely careful and exact in ascertaining the result. Let him not, as unfortunately is but too often the case, be satisfied with the apparent result; if he does, he will be often deceived; and what is more, he will deserve it. On the contrary, let him either measure or weigh (the latter is decidedly to be preferred) the product of every experiment, and always an equal quantity of the main crop, in order that they may be compared. In a small experiment the difference of a few pounds, nay, even ounces, will make a material difference in the product of a field; yet this would not be perceptible to the eye, and in deciding in that way, what errors may be committed. Is it not the height of folly to act thus, and yet many of our planters make no other experiment, and live and die without profiting either themselves or their neighbors by any improvement. This, as we all know, will not be owing to the state of perfection to which agriculture is at present brought, for I believe it is more defective, and more has yet to be ascertained relative to it, than any other science.

I am, &c.

A RETIRED PLANTER.

The following report on the subject of a geological survey of this State ought to be generally published in the papers throughout the States. It abounds with sound, liberal, and enlightened views, and does honor to the committee who prepared it. In a word, it is full of truths of interesting import, accurately and forcibly expressed. The memorial which drew forth this report proceeded from the American Institute of this city—an association of gentlemen unsparing in their exertions to promote science, as well as the useful arts. It is much to be regretted that their memorial for the construction of the Rochester and Olean Canal had not been favored with a sprinkling of the same intelligence and liberality.

Report of the Select Committee on the Memorial of the American Institute.

Mr. Clinch, from the select committee to which was referred the memorial of the American Institute of the city of New-York, praying for a geological survey of the State, reported:

The memorialists do not enter upon any detailed examination of the subject which they have presented for our consideration, but allude in general terms to the acknowledged obligations of government to advance the cause of science and of learning; and strenuously urge that efficient measures ought to be taken to promote the progress of this important branch of knowledge, inseparably connected as it is with a thorough disclosure of the internal resources of the State, and with the industry and enterprize of its citizens.

They remark that New-York has yet taken no steps towards an examination of the geological features of its extensive territory; and they forcibly present to the attention of the Legislature the example of our sister States of Maryland, Tennessee, New-Jersey, Massachusetts, and Virginia, in all of which scientific researches of this character have been instituted by law, and have resulted beneficially to the various interests in which the population are engaged, and with signal advantage to the promotion of the cause of science, particularly as regards the latter service, in the course pursued by Massachusetts; an enlarged edition of the geological researches of which State has been published by legislative authority, and presents a noble evidence of the liberal and enlightened policy of the government of that Commonwealth.

The memorialists further urge that the geology and mineralogy of our extended territory are prominent objects of useful and interesting inquiry, both in an economical and scientific point of view; and that a knowledge of the localities and extent of the different formations of quarries and minerals can only be acquired by the scientific researches of competent persons, the labor of which is altogether too onerous to be undertaken by individual enterprize, and involves an expenditure of time and money in the public service which can not be reasonably expected from the scientific institutions of the State, which have been established by private exertions and with limited means.

The memorialists conclude with suggesting the propriety of employing a commission, to be composed of three or four competent persons, under the public authority of the State, to make a complete geological and mineralogical survey of the whole of our territory; and to present the result of their labor and researches in a report to the Legislature, at as early a period as may be consistent with the full and just discharge of the task assigned to them.

In the last annual message of Governor Clinton, (and repeatedly in former messages,) legislative encouragement is earnestly recommended to be given to mineralogical researches throughout the State, with a view to the discovery of coal, which, from various geological indications, it is asserted must exist within our limits. The importance of these investigations is dwelt upon with apparent anxiety, and made manifest by all the cogency of argument and perspicuous array of facts which usually accompanied the recommendation of measures of public policy from the same enlightened source. A select committee, to which this part of the message was referred, made an elaborate and learned report upon the subject, confirming by unerring evidences the fact of the existence of bituminous coal and other mines of mineral wealth in various sections of the State; and clearly demonstrating that there is a general uniformity and analogical connection prevailing in Europe and in this country with regard to the fossil and other geological formations, as yet known to both.

During the session of the Legislature of 1829, a memorial was presented from the Lyceum of Natural History in the city of New-York, praying for an inquiry into the expediency of instituting a search for bituminous coal within this State. This memorial was accompanied with a resolution recommendatory from the Common Council of that city. The select committee to which the memorial and resolution were referred, reported favorably and at length upon the subject. That committee ardently endeavored to impress upon the Legislature their own conviction that this department of science peculiarly deserves the encouragement of the government, inasmuch as the beneficial results of its pursuits, whatever degree of success may attend them, cannot be otherwise than shared by the whole community—opening new sources of power and profit to the State, through the genius, and industry, and enterprize of the people. It is well remarked by that committee, in reference to the particular branch of one sub-

ject to which their attention was directed, that Legislative authority and munificence would be nobly employed in giving encouragement to discoveries in that department of science which would find their way to every man's *fire-side*.

The reports of the committees above alluded to, dwell with great fluency upon the utility and necessity of instituting these examinations into the "bowels of the earth;" and eloquently appeal to the intelligence and patriotism of the Legislature for unprejudiced measures and liberal appropriations to accomplish such objects. (See Assembly Journal, 1828, 1829.)

Knowledge is power! If this be true in its general sense, how peculiarly forcible is its application to the scheme of political economy pursued by the government of every Commonwealth? The power to be derived from a thorough manifestation of the sources of industry within its own sphere of control, is a pre-requisite to the perfection of every system devised for the well-being of the governed. Tested by this sentiment, the power possessed by the State of New-York is yet in its infancy. The knowledge to be acquired from a complete geological survey of our territory cannot fail to have the happiest influence upon our increasing prosperity; and as a director of the energies of our inventive and spirited people; as furnishing a varied choice of pursuits to the indolent and capricious; or, to the partially incapable portion of a population, composed, and likely to be forever composed in some degree, of the adventurous and unfortunate of all nations, it will be an unceasing source of wealth to the State, and of grace to the condition of its dense and variously characterized community.

It would be as difficult as it is believed to be unnecessary, to enumerate all the benefits which would accrue from a faithful geological survey of the State of New-York. Your committee are satisfied that legislative patronage cannot be extended to any one department of science that will conduce more decidedly to the individual interests of every inhabitant within our borders. Every man who cultivates an acre of land amongst us, must find himself wiser and wealthier in the sequel of an investigation, which will teach him where to direct his search for useful and valuable, though secret products of his land, and prevent his continuing to throw away time and money in fruitless exertions, which a proper knowledge previously obtained would have taught him never to have commenced.

The States of North Carolina, South Carolina and Pennsylvania, in addition to those already enumerated, have made legislative provisions for geological surveys within their respective territories; the results of all of which, as far as is known to your committee, have invariably been of a useful and valuable character.

Unerring data, acquired by the exertions of scientific men of both hemispheres, have satisfied them that the hidden riches of our own soil are as valuable and various as those already discovered in Europe.

We are as yet thoroughly acquainted with but a small portion of our salt district; and the bringing to light of vast beds of bituminous and anthracite coal, which are reasonably conjectured to exist in the neighborhood of our navigable streams, would in itself be a popular source of pride and profit to the State.

The geological features of our soil present in many particulars a very extraordinary aspect. The incongruous mass of materials, and the multitudinous variety of forms and things, of which the hills and valleys of a portion of our State are composed, were most graphically exhibited to our view by an eloquent member of this House, in a recent debate on the subject of internal improvement. It was ably and admirably said on that occasion, that this section of the State suggested to the mind of the intelligent observer, the idea of a "DEPOSITORY OF MATERIALS OUT OF WHICH TO MAKE WORLDS!" What mines of wealth may not this combined compression of nature's works now nurture in its bosom? A speculative and inquiring spirit may pursue this thought to the most brilliant conclusion, and yet not overstep the modesty of reality; for, as far as they are known, the certainties of science and the images of the imagination, in the contemplation of this subject, present the same picture to the mind.

It may not perhaps be available to inquire what influence an ample knowledge of the geological features of our whole State would have had upon the location of our great public works; but its important bearing upon the route of canals and railroads hereafter to be constructed, will be evident to all. The facility of excavating, the probable amount and materials of transportation, the economy and feasibility of the proposed works, and the proper character of them, are all subjects that will be most effectually illustrated by a general geological and mineralogical survey.

Another valuable consideration is, the beneficial effect which an intimate knowledge of our internal resources will exercise, in solving the doubts of those who experience difficulty in deciding upon the expediency of establishing the several prominent public improvements now under discussion.

But the most impressive view in which this subject presents itself to the minds of your committee is, that the principle of self protection, which justly receives so large a share of consideration in determining the public policy of the State, would be materially enlightened by the data derived from the proposed survey.

The question of defending ourselves against the internal improvements of our neighbors, by constructing works which will command the trade of adjacent territories, while it would lose none of its propriety, might cease to be a matter of paramount importance, in consequence of the disclosure of these fountains of industry and wealth now hid in darkness within our own soil.

Taking these general views of the subject, your committee are of opinion that the suggestions of the memorialists are in accordance with the soundest policy and best interests of the State; but your committee are not prepared to decide upon the best means of carrying these suggestions into effect.

Considering the late period of the session, they are willing to give the subject a progressive action during the recess of the Legislature, and have no objection to such disposition of it as will bring to its support the fostering care of an accomplished guardian; attract towards it that degree of general attention to which its importance is entitled; and give it the advantage of the volunteer aids of scientific men in all parts of the State.

Your committee have therefore unanimously agreed to propose the following resolution:

Resolved, That the Secretary of State be requested to report to the Legislature, at its next session, the most expedient method of obtaining a complete geological survey of the State, which shall furnish a scientific and perfect account of its rocks, soils and minerals, and of their localities, a list of all its mineralogical, botanical and zoological productions, and provide for procuring and preserving specimens of the same, together with an estimate of the expenses which may attend the prosecution of the design, and of the cost of publication of an edition of three thousand copies of the report, drawings, and geological map, of its results.

PLASTER ON CORN.—Some of the best farmers in Westchester county, near the Hudson, sow gypsum broadcast on the ground they intend to break up for corn. My previous impressions were that this enriching substance was applied to corn only in the hill. It may be a query whether the principal or only benefit which the corn derives from plaster sown broadcast before ploughing, is not to be attributed wholly to the increased growth of grass which is turned under and fermented. This mode of application is certainly far less tedious. These same farmers began this spring to sow plaster early in April, when the grass had but just commenced to grow. This does not appear to be in accordance with the rule, that the benefit of plaster is in proportion to the size of the leaf when applied. S. F.

SCRAPS FOR HOGS.—In former numbers of the New-York Farmer it was stated that scraps of tallow-melters fed to hogs would impart a disagreeable flavor to the pork, and that it was necessary to give them grain two or three weeks before killing them. On the 12th of February last I killed a hog fed almost altogether on scraps, until within a week before killing. The pork was sweet and pleasant, free from any taste of the scraps. Mr. Wheelock, of Elizabeth street, has for several years past fed his hogs exclusively on scraps to the time of killing them. He not only does not discover any unpleasant taste, but finds his pork superior to that generally found in market.

The demand for scraps for chemical manufacturing purposes renders a supply of this article uncertain. S. F.

April 18, 1835.

DEMAND FOR COCOONS.—Judging from appearances, the demand for cocoons and reeled silk, the coming season, will exceed the supply in a thousand fold. The silk manufactories in Dedham, Mansfield, and this city, are depending principally upon the new crop for the raw material. The last year's crop is already exhausted, and we understand that scarcely a bale of foreign silk can be found in the commercial cities. Those, therefore, who raise a crop this season may depend on its being sought for by the manufacturers and at a very liberal price. We should not be surprised if they command $4 a bushel. Such persons, therefore, as have foliage, will do well to make cocoons, if they are not prepared for reeling.—[N. E. Farmer.]

LOCATION OF THE FLOWER GARDEN.—I would wish some reader of the New-York Farmer and American Gardener's Magazine would give his opinion, whether the following extract from the March number of Loudon's Magazine accords with or condemns the criticisms on Mr. David Austin's garden, at Throg's neck, recorded in Vol. VII, page 194. S. F.

May 19, 1835.

"The parallelogram forming the flower garden, is considered by itself unexceptionable, in point of both principle and rule. Whether such a flower garden ought to be placed directly in front of the house, or not, must depend on the character of the distant scenery seen from its windows, the principle of guidance being the unity of expression of the entire view. When the view from the lawn, front of the house, is of a grand, forest-like, or mountainous character, a conspicuous flower-garden in the foreground is incongruous with the general effect; that is, it detracts from the unity of the expression. In such a case, the foreground would express culture, softness, and beauty; and the middle distance, sylvan, alpine or savage grandeur, two expressions incompatible with each other. If in such cases some local circumstance compels the artist to form his flower-garden in front of the house, it ought to be concealed from the windows by being sunk by a terrace walk, as in the design before us; or by placing the house on an elevated platform, which should at the same time form a foreground to the distance."

A COSTLY NOSEGAY OF FRUITS.—At the grand fete held at Wentworth House, last fall, there was, says a correspondent of Loudon's Magazine, placed on the table a *bouquet* of *fruit*, composed of every variety of grapes, pine apples, peaches, nectarines, &c. five yards in circumference, and valued at £600, or near *three thousand dollars*! This appears like an enormous price for fruit in a country where so much attention is given to raising it. Is the price of good fruit in the United States increasing,—and if so, why? S. F.

STRAWBERRY CAKE.—In several parts of New-England, and I suppose wherever the worthy housewives of that portion of our country are scattered, a *short-cake* is made, and while hot is cut open, and strawberries sweetened with sugar are put in. This cake is said to be delicious. S. F.

RICE—SCARCITY OF VEGETABLES.—Among the most wholesome and easily digestible vegetable substances, rice stands among the first, and for cheapness it is unrivalled even by the potato at present prices. It admits of as many modes of preparation, and is a more delicate and palatable dish. But so habituated are the people of the northern States to the use of potatoes, that they scarcely conceive it possible to provide an ordinary farmer or mechanic's dinner without potatoes; and these will often be at this season of the year unfit to eat, and the only vegetable on the table. Rice, on the contrary, can always be had in a sound state, and is readily prepared to be used in all the modes of the potato—can be boiled and eaten with pork and beef, with all kinds of fried meat, especially with ham, with sugar, milk, molasses, butter, sauce of wine, or superior cider, and in hundreds of other simple preparations. During the present season, when all kinds of vegetables grown in the northern States are scarce and dear, the substitution of rice for potatoes should be urgently recommended. S. F.

April 28, 1835.

WILD ONIONS.—Since the grass has begun to grow, I find two thirds of my farm is full of this injurious and offensive plant. On mowing or meadow ground, that has been well seeded, there are few or none; on neglected fields they are abundant. In one lot that has been well manured, and planted for several years in succession with potatoes, they appear to be three times as many as on any other lot. My impression is, that ten to fourteen pounds of red clover seed sown to the acre, and a free use of gypsum, will keep them under, and eventually entirely subdue them. Plenty of grass seed and manure I consider likely to be the best way to destroy almost every troublesome weed. Have any readers of the Farmer practical information on this subject? S. F.

April 25, 1835.

AMERICAN SILK HOSIERY.—We were shown at Mr. Bird's Store, in this town, this week, some very beautiful specimens of silk hosiery for gentlemen, entirely of American fabric. They were a very neat and fine article, with every indication of durability, and are equal, if not superior to those of European manufacture. The silk was produced and manufactured at Dedham and sold at $10 per pound. It was made into hose at the manufactory in Newburyport. We believe that small quantities of silk goods have been occasionally manufactured in different parts of our country, within a few years. Among other articles, we were shown about a year since a large variety of vesting patterns, manufactured by Mr. Golding of this town. These things all give an earnest of what may, and ultimately will, be accomplished in this country in the manufacture of silk goods.—[Bunker Hill Aurora.]

The Jingo Tree which grew on the estate of the late Gardner Greene, and of which we spoke the other day, has been safely removed to the Common, where it is to be planted. It is probably the largest tree ever transplanted in this vicinity, being 40 feet high, and the circumference, at 3½ feet from the ground, 4 feet 4 inches. The labor of transplanting it was undertaken by Mr. Sheridan, formerly gardener on the estate. The earth was carefully removed from the roots, and the tree lifted by shears and tackle from the ground, sufficiently high to pass under it a low wheeled drag. The roots were then carefully covered with matting, and the tree lowered upon the drag, on which it was easily supported in an upright position, being kept from falling by ropes attached to the top and held by men who walked along with it to its destination. Mr. Sheridan tells us that there is not the slightest doubt that it will live and flourish in its new location.—[Boston Transcript.]

QUADRUPEDS OF MELVILLE ISLAND.—It will be recollected that this Island is near what is called in the Journal of the Royal Geographical Society, the Peninsula of Coburg—Northern Australia—a section of the world so comparatively new, that its productions are scarcely known. All the animals hitherto discovered there have been peculiar, and so unlike any thing in Europe, that naturalists are still looking with deep interest for further discoveries. Major Campbell, of the army, formerly commandant at Melville Island, has favored the learned with the results of his personal observations on its natural history. He remarks that the kangaroo, opossum, bandicoot, native dog, a small brown rat, a species of squirrel, and an animal very destructive to poultry, with a sharp nose and long brown hair, a tail 14 inches long, but bare, like a rat's, excepting within three inches of the tip, which is covered with long white hair, are the only quadrupeds. The animal measures 27 inches in length. Singular as it will appear, as yet it has no name. The flying fox or ternate bat, *vespertilio vampyrus*, is a wonderful creature. In flying, it looks nearly as large as a dog. By some means one of them was brought to Boston, and the wings, extended, measured near five feet from tip to tip. Major Campbell says several hundred of them fly at a time, and attach themselves to the limbs of trees. There are no other native quadrupeds yet detected. Birds are numerous beyond conception. Six varieties of pigeons, seven of paroquets, four of king-fishers, beside ducks, cranes, magpies, ravens, hawks, owls, water birds, &c., will convey some idea of their vast abundance in that beautiful country.—[Scientific Tracts.]

WEARING SPECTACLES.—Mr. Curtis, the celebrated oculist, in a recent publication, is very earnest in teaching the world, that when an individual feels obliged to wear glasses, for the first time, it is immensely important to future vision not to have the spectacle eyes too small. If, says Mr. Curtis, the glasses are not sufficiently large to cover the circle of the orbit, the wearer is obliged to look against the frame, as well as above and below it. The large, old fashioned spectacles, are therefore altogether superior to the modern article: oval bows he condemns in toto, as they exert a destructive influence over the organ, by obliging the whole muscular power of the eye to be exerted, in order to receive impressions through the very contracted window of the bow. He thinks highly of gauze spectacles, as screens to keep out the dust, so terribly destructive to vision in sandy regions and in cities, where the dust is whirled with tremendous violence through the streets, like blowing through so many tubes. He seems to be much opposed to operations on this delicately constructed organ.—[Ibid.]

[From the Genesee Farmer.]

ON THE USES OF THE ROLLER.—It is not every farmer that rolls his wheat in the spring of the year—indeed we think that many are unacquainted with the operation; and yet if it were made a standing rule, to perform it as soon as the ground is free from frost and dry enough to let the roller pass without clogging, we believe the *increase* of the crop would pay for all the labor many times over. Let us look at the nature of the thing. Clayey lands or stiff loams produce the greatest crops of wheat, especially if such have been originally calcareous; and one reason is, that this soil *shuts closer round the stems* of the wheat than any other. If that kind of land cracks in dry weather, the first shower causes it to swell, and shut up every crevice. Some of our loams, however, are so loosened up by the frost, that soon after they thaw the foot may be readily worked under the surface. This condition is unfavorable to wheat. In showery weather, the soil is inundated in consequence of the looseness of its parts, which too freely admit the rain; and if we contrast this state of things with clayey land, we shall discover that something ought to be done to counteract this defect of the soil. Now, rolling early in the spring is the remedy; and though it is getting late for the operation this season in many places, yet on other fields it might still be useful.

We may consider the use of rolling wheat in another point of view. The surface of loamy land in the spring often abounds with small projections and depressions, which have resulted from the heaving of the frost. The roots of the wheat are consequently exposed, and too much water is retained from heavy showers. The roller is also a remedy for these evils.

There is a practice among many farmers which ought to be noticed under this head. We allude to sowing clover seed on wheat without either rolling or harrowing it in; and when the season proves unfavorable, a large portion of the seed is wasted. "It did not take well;" and many a farmer has consoled himself in this way for the loss and disappointment of a crop. If he should sow his wheat without intending to cover it, his neighbors would pronounce him insane. Now, the truth is, because clover seed will often *take*, we have got into the habit of trusting too much to the weather: but our duty as good farmers is to make it *take* by covering it with the soil, so that when the young plant puts forth its root, it may not be scorched or dried up by the first hot sun.

Our principal object at this time, however, is to call the attention of farmers to the importance of the roller on sward land newly turned over by the plough. Some years ago, when the obstruction of many stumps remained in our fields, an even regular inversion of the sod was hard to achieve; and some cultivators, after rooting it up with the old-fashioned *bull-plough*, put on a heavy drag, and *tore it to pieces* as much as possible. It was again ploughed for the purpose of loosening up a part of the sods that had become settled down too firmly to be disturbed by the drag. It also frequently happened that *balks* would be left in the first ploughing, partially covered by the furrow slice, and on these parts the drag would prove inefficient. A second ploughing and a second dragging was therefore indispensably necessary. If the season proved dry, this method answered well, though it was a very laborious one; but if it happened to be wet, this way of raising Indian corn was a hard concern, and we believe it is now entirely laid aside in this quarter.

When grass land is intended for this purpose, it is now generally ploughed with an even furrow, and but once. Many farmers seem not to be aware, however, of the benefit of rolling before the harrow is put on. This operation settles the sod firmly on the bottom of the furrow; and there it will remain undisturbed while the harrow is pulverizing the soil. A light harrow with many teeth is altogether preferable to one with large teeth, which never ought to be used on such occasions, as it is liable to tear up the sod, and more especially if the sod has not been rolled. Let him who has not a roller, buy one.

[From the Baltimore Farmer and Gardener.]

CORN STALK FODDER.—In some late numbers of your Farmer and Gardener I read with much pleasure a detail of the management of the Corn Stalk as a food for cattle, &c. First induced to turn my attention to this subject by the different communications to be found in the Farmer for some years back, I began in 1830 to test the value of the refuse of corn, when subjected to the process of steaming. I was not long inventing a strong, rough apparatus for my purpose, which succeeded well, and in which I prepared about twenty bushels at once. Previous to this I had, however, fallen on a plan of saving my corn and stalks, &c., somewhat different from my neighbors; but in a way that the columns of your valuable paper had been long laboring to persuade the corn planters of the country to try fairly, viz.: to "cut down the stalk at the ground," at a certain stage of maturity, and at one effort to cure corn, stalks, blades, &c., in the field. I had seen this first practised on the south branch of the Potomac, as far back as 1812; and about 1817, I determined to try the process in this section of the Union, not being able to discover any solid reason why it should not succeed as well here as on the south branch of the Potomac, or elsewhere; but indeed compelled to believe, from a recollection of the climate I was in, that it must succeed here much better. In 1817, I tried six acres—cut it down at the ground; about a week after the *blades* were ready for stripping. I found a little shrinkage in the grain, but I felt satisfied, that as my corn was not like Sterne's razor, "made to sell," but to eat, that what was lost by the shrinkage was no part of the *nutritive principle*; and I did not despair of getting over that difficulty by further trial, and by improving the mode of proceeding.

The following year I cut down *five acres*. I began the *saving* of this field of corn by going through it, as *soon* as a few of the under blades appeared ready to pull, and gathered and brought them home, throwing them in an old out-house to cure, and which, by a little turning over, I readily effected. I will remark here, that this *five acres* was a piece of corn on which I was trying the effect of rotten cotton seed as a *manure*, by planting four stalks in the hill, on light land, at the distance of *five feet* by *four*. On this field I had determined also to try the full effect of an economical management, in saving the result of labor bestowed on the earth. "Save all" was my motto, and I literally saved every blade.

Before my corn required a *second* pulling of blades, I found the *shuck* on the *ear* in that state which authorized, I believe, the next step, and the principal one I had in view, the new mode of saving the balance by one *coup de main*. The result of observation and reflection induced this determination, viz.: that in the saving process, the mode of stacking the corn stalks that would permit them to cure the most *gradually* would certainly admit the least loss by shrinkage, from evaporation, &c. To effect this, I selected four strong, careful hands, to cut and lay down, taking *eight* rows at a through. On getting to the end of the rows, they turned round, and gathered together *sixteen hills*, each bringing to one, who attended to the stacking. As each man placed his armful on the ground, the butt ends were pressed by him as far *into the earth* as possible, throwing the tops together, so that when the sixteen hills were brought together at the tops, the mass presented a sugar-loaf appearance, spread well at the bottom, to admit the entrance of air—tying at the top with a bandage of crab grass, found among the corn, and twisted into a small rope in a few minutes. In this way I cut and stacked my field. On the 10th day, I found by an examination of the inside of the stacks, that the whole was cured in a way that I could not have exceeded by any other process, although the weather had been *rainy* occasionally. I hauled the whole home, and packed it away under open sheds, and in old out-houses. In this state it continued, until winter's bleak and stormy weather admonished us that in-door business was to be attended to, when all hands went to stripping "*corn* and *fodder* from *stalks*." In doing this, I observed the following order, viz.: each individual threw his ear of corn, as he pulled it off, *behind* him, and his *stalks* on one side, laying them down with attention to *regularity*; and the fodder on the other. As soon as he had an armful of stalks to remove, he rose and placed the *stalks* in a *pile*, casting the fodder into another depository. All this precaution, as regarded the *stalks*, was to have them in a situation that with expedition and convenience they could be placed in a *cutting-box*, to which they were to be subjected. In one day's work, I had a prodigious pile of stalks thus stripped. The next *rainy* day, I brought in my "Eastman," and a man and boy soon reduced the pile to pieces, half an inch in length. Here, Sir, I would just remark, what a quantity of this *labor* I

got through within a short time, by pursuing every movement systematically, and being prepared for every operation before I commenced it. It will now be readily granted, that I had saved as much of the *nutritive qualities* of the *stalk*, *shuck*, and *blade*, by my mode of curing, as was possible to effect; and also that I had prodigiously *diminished the labor* usually bestowed in the common mode of saving *corn* and its *refuse*. At the same time that I was preparing the *stalks*, I also *shucked*, so that in cutting up the *stalks*, I cut, at the same operation, a proportion of *shuck* with *stalk*.

But the principal object was yet to begin, viz.: to prepare these cut *stalks* and *shucks* in such way as would render them the most *nutritious* and *palatable* food for cattle. To effect this, I proceeded thus: I placed three *strong* hogsheads, made of cedar, *well pitched* on the outside, on a platform, about three feet from the ground, having at the bottom a large spigot to let off their contents. Just before these, I had a large *trough* placed, at the distance of twenty feet, and well enclosed along with the hogsheads. Between the *hogsheads* and the *troughs*, I had the steam apparatus placed, all under a shed. Into these hogsheads I threw a *small quantity of boiling water*, and into the water a *portion of corn meal*, (coarse ground,) just sufficient, when the cask was filled, to produce the *vinous fermentation*, as if going to distil; with a good straw mat top, for each cask. After an hour, and well stirring, I filled up with cold soft water, and left the mass to ferment. As soon as my liquid was ready, or just as the acetous fermentation was about to commence, I worked off in my steaming box a turn of the *stalks* and *shucks*, mixed up, and as soon as sufficiently steamed, I placed a quantity in my trough, *pressed them well down* with a *false* top, moveable as I wanted, and now drawing the spigot from the cask *ready*, the liquid was permitted to *cover them*, running along a portable, light trough, such as distillers use for conveying water. This I did in the evening, and by morning I took up in light buckets the quantity required for the morning's feeding of my oxen and cows, &c., placing it in the *feeding troughs*, stepping only a *few feet*, sprinkling a little salt over the mass. The cut *stalks* and *shucks* had become perfectly charged by absorption with the *liquid*, at once one of the most *palatable* and *nutritious* preparations yet discovered—of this food I gave them plenty. The effect on the *flesh* and *milk* exceeded my most sanguine expectations. My cattle became excessively fond of it, and I so fed as to "lose nothing."

My casks, by a little *management*, I had always "under way," one always ready. I now ascertained to my full satisfaction, that I could not bestow too much *trouble*, as it is *called*, in SAVING my CORN STALKS.

Satisfied of the value of my *labor*, I have since added to the *steaming-box* all refuse potatoes, turnips, cabbage leaves, beets, parsnips, carrots, and pumpkins, squashes, cucumbers, &c.; in fine, all the vegetable productions of the *field*, *orchard*, or *garden*, as the season may afford, "that nothing may be lost," and I find that I am well paid for the labor bestowed. The last, after absorbing what they will contain of the liquid, goes to the support of "old Ned."

AGRICOLA.

TRIAL OF MR. HERBEMONT'S WINE.—We regret that the accidents mentioned below should have prevented an examination of all the wine. In addition to this decision, we had before heard expressed, by Gideon B. Smith, Esq. formerly editor of the American Farmer, praise equally strong, and more fully stated, of the fine flavor of Mr. Herbemont's Champagne wine.

Nelson Co., Feb. 16, 1835.

To the Editor of the Farmers' Register.

By a series of accidents the several specimens of Mr. Herbemont's wine failed to reach me at the time (and those of one kind in the condition) which I expected, which has prevented my writing heretofore. Having, as I mentioned to you before, but little pretensions myself to connoisseurship in such matters, I submitted the first (the Champagne) to the judgment of a friend whose opportunities and observation qualified him to speak understandingly, and my natural taste concurred with his more cultivated, in pronouncing it the best specimen of American wine we had ever seen. It seems to differ from the most acceptable imported of the same kind in nothing, except its being still, instead of sparkling.

Unluckily one of the bottles of "Port" was broken, and the cork of the other was loosened—which so impaired its flavor as to forbid the expression of opinion as to its merits. The third kind having been sent in a different direction, I did not see it until the last month, when several gentlemen partook of it. It was thought at the time to resemble, in most of its properties, the "Madeira" generally consumed in this country, except perhaps that it had less body and but little of the saccharine taste. This may arise from its having, as I learn, no addition of spirit, and but little of the second ingredient being necessary for its preservation when it is not subjected to the trial of a voyage.

These three kinds of wine were all made, as I understand, by a variation of the process, from one species of grape (Herbemont's Madeira), until lately supposed to be a native: and, together with other successful specimens, should suffice to remove every doubt as to the adaptation of our climate and soil to this species of culture.

N. F. CABELL.

ORIGIN OF "HERBEMONT'S MADEIRA GRAPE."— * * Since I wrote to answer your inquiry, I have learned a little more concerning the origin of the vine called "Herbemont's Madeira." It certainly has been received from France, under different names, and also from Madeira. It is most undoubtedly one of the most esteemed families of vines in Europe. In certain situations in this country, Charleston for example, it does most admirably well. It has been received from France by the names of "Muscat gris," "Pineau," and "Maurillon." I have not yet been able to learn by what name it has been received from Madeira. It changes some of its characters so much in this country, as scarcely to be known again—for here it grows to the size and vigor of our strongest native vines. The nomenclature of the vines is, in Europe, in such a chaotic state, that it would take the labors of at least twenty Hercules to clear it up. Now that this culture is fairly begun in this country, we should be very particular with our names; and confusion in nomenclature is frequently inextricable, at the same time that it is exceedingly disadvantageous to the cultivators. The names should be short, if possible, and unchanged after they have been adopted. I would suggest, for example, that the excellent kinds introduced by the names of "Norton's Virginia Seedling," and "Cunningham's Prince Edward," be simplified, by suppressing every thing but the names of the gentlemen entitled to the honor of naming them.—N. HERBEMONT.

[Farmers' Register]

OF RAISING CEDARS FROM THE SEED, AND TRANSPLANTING THEM FOR HEDGES.—We annex below the extract referred to by our correspondent, and thank him for pointing out what we had forgotten, and still more for adding thereto his own experience on the subject.

Fayetteville N. C., Feb. 16, 1835.

To the Editor of the Farmers' Register.

Mr. S. Hobson (whose inquiries were made in your No. 9) will find in page 22, Vol. III. of the American Farmer, the mode of raising cedar hedges from the seed. I have followed the directions given there with the most satisfactory results. More than half the cedar berries prepared and planted agreeably to those instructions vegetated and flourished well.

I have not lost more than one tree in 50 by transplanting, unless the tops were cut off. In that case the trees die or decline, so as to be of little account: they will improve by severe trimming if the top is left perfect. I prefer a wet season in March or April for transplanting ever-greens, but have succeeded by taking proper pains at all seasons, except the extremes of heat and cold.

B. R.

[From the American Farmer.]

Gather the berries in November or December. Rub off the skin and wash the kernels—rubbing them well between the hands, so as to get off as much of the resinous substance as possible, then mix them with unslacked ashes, and let them remain in the ashes for a fortnight; then plant them in drills as you would peas, and they will vegetate and come up the following spring; and being well nursed, they will in two years be fit to plant out in hedges. About the first of March is the proper time for planting them—throw into the bottom of the trench, light rich earth, such as may be had from the surface of productive ground. When the trees attain three feet high, you should begin to train the hedge—about the middle of summer is a suitable time for this operation, and it ought to be carefully continued until the hedge is as high as you may desire it—about seven feet high, and three and a half feet broad, is sufficient.

N. B. The better you cleanse the kernel,

the more certainly the seed will vegetate—by proper care an excellent hedge may be expected in seven years, which for beauty and durability cannot be surpassed, either by thorns or any other growth.

[From the Maine Farmer.]

STOCK AND PATTERN FARM.—Mr. Holmes: I intended to have sent you before, a sketch of the debate which occurred in the House of Representatives on the question of passing to be engrossed the Bill to Incorporate the Maine Stock and Pattern Farm Company. I perceive that you have already published this Bill and the Report of the Committee accompanying it. Perhaps it would be proper to say that a portion of the extracts in the Report were taken from the Report of a Committee of the New-York Legislature, on the subject of establishing an agricultural school.

Mr. McCrate, of Nobleboro', moved to strike out the third section of the Bill, which provides for the State taking a part of the capital stock of the Company. And I propose to give you the language of those who supported this motion, and you may rely on its correctness, for I took it down immediately from their lips.

Mr. Chase, of Sebec, said: Mr. Speaker, I hope this motion will prevail. What good is it expected such an establishment will do? Is it expected that farmers can be learned any thing—[a pause]—in this way? I am a farmer, sir, and I'm sure I don't want what share I own in the State of Maine to be *farmed out* to any body. The fact is, sir, every man knows how to manage his own farm better than any body can tell him.

Mr. Goodwin, of South Berwick, said: Mr. Speaker, this is an illegitimate child, and before we let it pass we ought to strip it of some of its illegitimate features. I think there is *speculation* at the bottom of it.

Mr. McCrate, among other things, said, "If the agricultural interest requires such an establishment as this, why have we not heard of it before? * * * * The State should never enter into a copartnership of this kind. There are so many different kinds of soils, that no rules can be devised which will apply generally or to all. The County of Hancock contains one kind of soil, and the County of Kennebec another, and so on through the State. * * * * * * I think no benefit will arise from it that will not be chiefly swallowed up by the County of Kennebec."

Mr. Parris, of Buckfield, moved to refer the further consideration of the subject to the next Legislature. Mr. Humphrey, of Gray, moved to refer it to the first Wednesday in January in the year 1900, which motion taking precedence, it was put and carried.

The motion to strike out the third section was opposed, and the Bill advocated by Messrs. Smart of Troy, Jarvis of Ellsworth, Underwood of Fayette, Dumont of Hallowell, Holmes of Alfred, Sturtevant of Cumberland, Phelps of Fairfield, and Abbot of Vassalborough.

The Senate referred the Bill to the next Legislature, and it was sent back to the House for concurrence, when the House receded from their former vote and concurred with the Senate.

I wish to submit to Mr. McCrate the following queries:

1. Of how many primitive substances do soils consist?

2. Are the principles upon which rests the science of agriculture (in the broadest sense of the term,) generally understood? If not, would any benefits result from an understanding of those principles? And what course would you devise to discover and disseminate a knowledge of them?

Yours, &c. SANFORD HOWARD.

[From the Edinburgh Quart'y Journal of Agriculture.]

ON JUDGING CATTLE BY MEASUREMENT AND WEIGHT.—To judge accurately of the quality and weight of live-stock, is an acquirement which every farmer is desirous to possess; and which, when its importance has been appreciated, presents itself in an enticing form to every pupil of agriculture. It is, indeed, the highest accomplishment which a breeder of stock can acquire; for by it he can never fail to maintain his stock in the highest perfection. It is an accomplishment, however, which can only be rightly acquired by very extensive experience; but even with the most favorable opportunities of acquiring it, some men cannot become good judges of stock. The faculties of acute observation and discernment must cull judiciously from the lessons of experience, before men can acquire the character of good judges. Many breeders who profess to judge of stock aright, are not gifted with these natural faculties, although their perseverance may have rendered their acquirements respectable; but many more who do possess them will not take the trouble to acquire the requisite knowledge by the slow process of induction through experience. They must become judges intuitively, or not at all. Hence the expedients which men employ to acquire that knowledge which can only be rightly acquired by experience. Hence the many tables which have been constructed by which the weight of live-stock may be ascertained by measurement,—the many rules by which their value may be calculated from their weight when alive. Good judges contemn those rules and tables; and they are right; for they can ascertain the real weight of marketable flesh on any animal much more nearly by the eye than by any artificial rule, and the true quality of it by the touch, a property which those tables can give no idea of. Nor need the comparative superiority of the senses excite surprise. There are so many points on an animal which are requisite to be attended to in ascertaining its value,—this point depreciating, that one enhancing it,—that the judgment must be exercised; but could the relative values of those points be easily ascertained by artificial rules, the judgment would be of no avail, the tape or the steelyard would universally become the substitute for the eye and the hand. Were the bodies of animals of a strictly mathetical form,—were they true cylinders,—and did the offals always bear an invariable ratio to the four quarters of flesh, then the tape and the steelyard would always tell accurately; but it is otherwise when the bodies of animals assume shapes of various proportions, the judgment then can alone ascertain their value, by comparing the value of the several disproportionate parts. It is nevertheless true, that the real weight of animals possessing symmetrical and full-conditioned bodies, approaching the nearest to the mathematical form, can be nearly ascertained by rule; but no rule hitherto known can be so explicitly relied upon in all cases, as the judgment. Besides, the rules, however excellent in themselves, may not be judiciously applied. Every man cannot measure animals, nor even weigh animals aright. One inch measured too much or too little in the girth and length of a large animal, and particularly in both, will lead to a much greater error than any judge will commit with the eye. The accuracy of the live-weight depends in a great measure on the state of the animal, whether he is full or empty of meat. But neither measurement nor live-weight, however accurately taken, can give the least idea of the quality of the flesh: the eye and the hand alone must judge of this essential particular.

We have been led into these remarks by comparing the measurements and live-weight with the dead-weight of some of the largest oxen which were shown at the show of the Highland Society at Aberdeen in 1834, and observing in some instances the great disparity between them. Whether the disparity arises from the inapplicability of the tables to such great weights as were shown at Aberdeen, or from some inadvertency in measuring and weighing the cattle, we have no means of ascertaining. The rule for ascertaining the weight of an animal by measurement, is to multiply the square of the girth taken behind the shoulder by the length taken from the fore part of the top of the shoulder, in a straight line to the tail head, as far as the flesh of the buttocks extend; and this product by the decimal .238, which will give the weight of the four quarters in imperial stones. To ascertain the dead-weight by weighing, is to multiply the live-weight by the decimal .605, and the product will give the dead-weight of the four quarters in imperial stones. Both these rules have been tested by experiment. It was long thought that the dead-weight of the four quarters was just equal to half the live-weight, and we believe this opinion is yet prevalent among country people; and, it must be confessed, this point has not yet been satisfactorily settled.

The first instance which we shall take to illustrate these rules, is Lord Kintore's large black ox. He was got by a pure bred short-horn bull, out of an Aberdeenshire horned cow, said to have had a slight dash of the West Highland blood in her. He was exhibited at the Smithfield show two years ago, and again brought down to Scotland, to be exhibited at the Highland Society show at Aberdeen on the 3d of October, 1834. He was seven years and six months old, when he was killed a few days after the show by Mr. Roger, Crown street, Aberdeen. His live-weight was 28 cwt., or 224 imperial stones. According to the generally received rule of the one-half, his four quarters should have weighed 112 stones, or by the rule of the decimal .605, which is considered by learned men as the correct thing, they should have weighed 135½ stones; but the dead-weight of the four quarters was 173 stones 4 lbs. He was heavier in London, where he weighed alive 30 cwt. or 240 stones. His falling off is a matter of no surprise, when it is considered that, when he was slaughtered, two or three of his ribs were found to have been broken; and it is not improbable that this accident had occurred to him when he was sent to London. His tallow only weighed 16 stones 7 lbs.; his hide 8 stones 3 lbs., a small weight of hide for an ox which measured round the girth 10 feet 3 inches; entrails 126 lbs.; blood, 84 lbs.; head and feet, 64 lbs.; heart and liver, 43 lbs.; tongue, 14 lbs.; and kidney collop, 5 lbs. As another instance of the fallacy of the rule for live-weight, we will take that of a spayed heifer which was killed by

Mr. Boswell of Kingcausie. She weighed alive 11 cwt., or 88 stones; the half of which would give 44 stones; and by the decimal .605, 53 stones 3 lbs.; but the actual weight of the four quarters was 49 stones. She was good, but not extra fat.

For the particulars of the following cattle, we are indebted to the kindness of Deacon Sparks of Aberdeen, who slaughtered all of them. Every one, who was at the show, will remember the lot of five remarkably fine horned Aberdeenshire cattle exhibited by Mr. Sparks. The red ox exhibited by Lord Kintore was got by a short-horn bull out of a Dutch cow; was six years eight months old; the four quarters weighed 142 stones 6 lbs.; the hide, 8 stones 6 lbs.; and the tallow 18 stones. The meat was rather inferior to what was expected.

The white ox exhibited by Mr. Boswell was a pure short horn, and six years eight months old. He measured in girth 9 feet 3 inches, in length 6 feet 2 inches, and the weight sent us was 15 cwt. 2 qrs. 17 lbs., or 125 stones 3 lbs. According to the old tables of Mr. Renton of Dykegatehead, a farmer in Berwickshire, that measurement should give 126 stones 9 lbs.; those of Mr. Stewart give 117 stones; and those of Mr. Ainslie, land-surveyor, 122 stones. The actual weight of the four quarters was 136 stones 10 lbs., being 10 stones 1 lb. heavier than the highest tables, which, at 7s. per stone, would depreciate the value of the ox when sold £3 10*s.* 7*d.* The hide of this ox weighed 8 stones, and the tallow 29 stones 12 lbs.; "being the greatest quantity," says Mr. Sparks, "of rough tallow ever known to be produced by one animal here."

The two grizzled oxen, also exhibited by Mr. Boswell, were got by a short-horn bull out of pure Aberdeenshire cows. They were six years eight months old, and had been worked for two years. The lightest colored one measured 9 feet 2 inches in girth, and 5 feet 9 inches in length, the weight sent being 14 cwt. 1 qr. 14 lbs., or 114 stones 4 lbs. Renton's tables give for that measurement the weight of 117 stones 12 lbs.; Stewart's, 108 stones 3½ lbs.; and Ainslie, 112 stones 12 lbs. The darkest colored measured in girth 8 feet 10 inches, in length 5 feet 10 inches, the weight sent being 13 cwt. 1 qr. 25 lbs., or 107 stones 11 lbs. Renton's tables give 110 stones 9 lbs., Stewart's 104 stones, and Ainslie's 107 stones 10 lbs. Mr. Sparks slumps the real weights of both these oxen at 32 cwt. 23 lbs., or 257 stones 9 lbs., the average of the two being 128 stones 11 lbs. The average weight of the two exceeds, in this case, the weight of the heaviest, as given by the highest tables (Renton's,) by 10 stones 13 lbs.; that is, £3 16*s.* 6*d.* in money value; and the weight of the lightest, as given by Stewart's tables, by 24 stones 11 lbs., or £8 13*s.* 6*d.* of money value, at 7s. per stone! The hides were 7 stones 7 lbs. and 7 stones 12 lbs.; and the tallow of both 35 stones 4 lbs. Mr. Sparks says, "these animals were most excellent meat, beautifully marbled, and superior to any of the short-horn crosses that ever appeared in our market."

The light red two year old ox exhibited by Mr. Boswell, was got by a short-horn bull out of a pure Aberdeenshire cow. He measured 7 feet 10 inches in girth, and 5 feet in length, the weight sent us being 9 cwt. 14 lbs., or 73 stones. Renton's tables give 73 stones 8 lbs.; Stewart's 80 stones 3½ lbs.; and Ainslie's 73 stones. The actual weight of the four quarters was 89 stones 10 lbs.; that is, 16 stones more than two of the three tables has given; or, in other words, this ox would have been sold for £5 12*s.* less than his intrinsic value, had the seller made his bargain by these tables. The hide weighed 6 stones 2 lbs., and the tallow 14 stones 4 lbs. Mr. Sparks considers "this was an extraordinary animal of his age." He was, without exception, the most perfect cross-ox we ever saw, showing his points fully, and all of them well covered. Mr. Boswell has caused a lithographic print of his likeness to be made, but it certainly does not do him justice. We conceived him to be the most perfect animal on the show-ground.

These facts are important, in so far as they prove that the rules hitherto upheld as accurate for ascertaining the actual weight of beef in the four quarters of any ox, by measurement and weight, give results very far from the truth. All the tables are considerably below the truth, when applied to cattle exceeding 90 stones; and their effect is to injure the farmer, by valuing cattle above that weight below their intrinsic worth; and the same remarks will apply to the decimal rule of .605, and, of course, in a greater degree to the rule of one-half of the live-weight. The rules for live-weight seem to undergo a modification in their application to oxen of middling weight. That of the one-half is, then, against the farmer, and that of the decimal .605 against the butcher. The rectification of these rules and tables presents an interesting field, in which ingenuity may exercise its talents.

Mr. Sparks thus proceeds in his account of the oxen shown at Aberdeen: "The ox exhibited by Mr. Lumsden, of Keir, which gained the premium for the best ox of the Angus or polled breed, weighed, in the four quarters, 14 cwt. 26 lbs., or 113 stones 12 lbs., hide 8 stones 8 lbs., and tallow 12 stones 4 lbs. The meat was rough, and very unworthy of praise. Likewise, the ox exhibited by Mr. Lumsden, which gained the premium as the best Aberdeenshire three year old ox, weighed, in the four quarters, 12 cwt. 2 qrs. 4 lbs., or 100 stones 4 lbs, hide 6 stones 2 lbs., and tallow 13 stones 9 lbs. The meat did not show the superior quality that characterizes the Aberdeenshire cattle. The five cattle I exhibited at the Show exceeded, when slaughtered, our most sanguine expectations for tallow and beautiful marbled meat. One in particular, a brown *buckit*, or down-horned Aberdeenshire ox, weighed, in the four quarters, 16 cwt. 26 lbs., or 129 stones 12 lbs., being an astonishing weight for the size of his bone. The hide weighed 6 stones 5 lbs., and the tallow 19 stones 13 lbs. The other four were proportionally such like." This *buckit* ox of Mr. Sparks reminds one of the axiom in breeding, "small in bone, great in value."

The three fat pigs, not exceeding fifteen months old, which were also exhibited by Mr. Boswell, were sent alive by steam to London; and, although one of them fell sick on the voyage, they were sold for £17, averaging 52 Smithfield stones each. The two year old boar which he exhibited and sent to London along with the pigs, although not fed up for the occasion, nor looked very heavy, was 40 Smithfield stones.

[From the same.]

ON WATER MEADOWS CAUSING THE ROT IN SHEEP.—About the year 1808, some land, part of which had been under water, much of which was a bog, and part of which was nearly dry, was drained, levelled and irrigated. Although it was drained, and was so far dry that horses could at all times walk upon it, yet it produced coarse herbage, rushes, and even some flags. In this state it remained for at least fifteen years, and during the whole of the time it was constantly fed on by ewes and lambs in the spring, and no instance was ever known of any of these sheep ever showing the slightest symptom of the rot.

As, however, the herbage was not good, and it was supposed that, by obtaining a better outfall, and a more effectual mode of drainage, the meadow might be much improved, it was broken up in 1829, drained more perfectly, better levelled, and was again laid down to grass after a turnip-fallow. The land then appeared to be perfectly drained. The turnips were excellent, and the grass which was sown in 1831 was beautiful. It was mown that autumn, after having been irrigated, and produced abundantly. It carried great flocks of sheep the ensuing spring, and produced a very great crop of grass early in the summer; but afterwards, in that year, the land appeared starved, and the grass did not come a second time to the scythe. In the spring of 1833, the meadow yielded a good pasture to the sheep, but, except in those parts which were dry and steep, it produced little for the scythe. Rushes made their appearance, and as it was probable that the land was not sufficiently drained, more drains were made, which produced a great deal of water. Then for the first time suspicions were raised that the sheep fed on the land were tainted by the rot, and it has been ascertained that, since Christmas 1833, sheep fed upon it have taken the rot in five days. In the spring of 1834, more drains were made in it. The consequence of which has been a great improvement in the quality and quantity of the herbage, but as far as the rot is concerned, it has been equally fatal to every sheep put upon it. It is necessary to add, that although the whole of this meadow is now so well drained, that, after a fortnight's irrigation, it will become so dry in a week as to admit of horses galloping over it without scarcely leaving the print of their shoe, yet as some parts of it are much lower, and consequently nearer the water by some feet than others, it might be supposed that they would be more likely to produce the rot than those parts which are higher. But this is not the case. It has been ascertained that they are all equally infectious. Other meadows in this neighborhood, irrigated partly by the same stream, have equally rotted the sheep, though perfectly well drained. As those other meadows are entirely new, it cannot be said of them that there was a time when, though less well drained, they did not rot the sheep. They do not affect the question, what can be the reason why land which, when less well drained, was fed by sheep with impunity, rots them now, when it is much better drained?

It cannot be attributed wholly to the seasons; because other water meadows in the same county, but on a different stream, did not rot the sheep in the spring, or even in the autumn of 1833. It is true that, in the spring of 1834, some few, out of very many, have been supposed to take the rot; and that in the autumn of 1834*, even on these meadows, scarce one has escaped the infection. But where they have taken it, some parts of the land have not been effectually drained.

* In the autumn of 1833, 200 ewes were fed on these meadows, and when killed, were all found to be quite sound.

These occurrences naturally excited attention; and recourse to every known means supposed to be capable of preventing this infection was resorted to. It has been said that sheep folded on fallows, and not allowed to go on to their pastures till the dew was off the ground, have escaped the rot, when others, which were allowed to remain constantly on them, have taken it; that dry food given to them on dry ground during the night, and that salt and oil-cake, have acted as preservatives. The evidence of the good effects of all these antidotes has been such as it was impossible to doubt. But each and every one of them has been tried here with the greatest attention, and it is painful to add, that they have all failed in *every instance*. The mode in which these experiments were made was this: Out of a large lot of fat wethers which were in the course of being killed, and which were all believed to be sound, three at a time were selected for the trial of each of these remedies, and put on the meadows. At the end of three weeks, their livers were invariably found to be more or less infected; while the livers of the others of the same lot which had not been on the meadows, and which had remained in their usual dry pastures, remained unaffected.

This continued for some time; but at last two wethers which had *not* been on the meadow, were found to have diseased livers, and therefore it cannot be affirmed with perfect certainty that the subjects of the experiment had taken the disease in spite of the remedies; because it is just possible, that, like the two last, they might all have taken the infection at some previous period.

[From the Maine Farmer.]

WHY SHOULDN'T A FARMER KNOW A THING OR TWO?—Why should not a farmer know more than other folks? They certainly ought to, for they have in this country more to do than others. They have to make more use of the powers or laws of Nature than other folks; they have to use the elements for tools—they are indeed practical chemists (whether they are aware of it or not), for they have to make use of the various substances which Nature gives them—they have to combine, separate, modify, and change, both simple and compounds. Their farm is at one and the same time a laboratory and a workshop, and in proportion as they operate in such a way as to afford the several elements of which the substances are composed, and upon which they are operating, to disunite or to combine, will be their success. They depend upon the vegetable world for subsistence—their labor is among and upon the plants of the earth—why should they not know the proper name and nature of every tree and herb and plant? They have to contend with insects and animals—why should they not know the habits and the natures of these as well or better than any other class of people? They have to work upon the earth, they have to put it into a condition to bear a good crop, they have to change the state of it and adapt it to the various purposes and crops,—why should they not know more and better respecting the ingredients of their soils—the various mineral or fossil substances which they may find either upon their own or other's farms? They have to "discern the face of the sky," and watch the changes of the atmosphere, and regulate their movements in accordance to the changes of the weather, temperature, &c. Why should they not know as much or more of the composition of the air or atmosphere, and the science of meteorology, than any other people? They must use tools or implements of labor. They must take advantage of the principles of mechanics, and the application of mathematics to practical life. Is there any good reason why they should not know as much or more than others, respecting the science of Mechanics or Natural Philosophy. In this country they have to contribute largely to the support and formation of the government, and upon them depends the election of rulers and lawmakers—why should they not understand the fundamental principles of National law—political science, and political economy? They have to administer to the sickness of animals under their charge,—heal wounded and restore health,—why should they not perfectly understand comparative anatomy, at least, and also physiology and the symptoms and treatment of diseases, as well as any others? Indeed, so wide is the field of his labors, so numerous the objects with which he is connected, so various the operations which he has to perform, that we verily think a farmer ought to be the most learned man upon earth. But can one man conquer or make himself perfectly familiar with every science and every thing? By no means—yet nevertheless he should have his mind so well stored with the general principles of all the sciences, that he can be guided by them when it becomes necessary to be more particular; and to know when he employs a man devoted particularly to any one branch, whether he is competent to the task, and will discharge his duty to him with fidelity and precision.

WHEAT CROPS DESTROYED BY FIELD-MICE IN FRANCE.—From Angerville, it is stated that the ten bad crops which have occurred during the last fifteen years have almost ruined our cultivators, and have caused many farms to be tenantless, the occupiers returning them on the hands of the landlords as the leases fall in. One proprietor alone in this district has now five or six farms in this predicament. The cause of all this distress is attributed to the field mice. They devastate every spot, and this year they have invaded fresh districts, and some growers have delayed sowing their wheat till spring, there being no chance of protecting it from these vermin; and in such cases the mice have forsaken the fields where they could not find subsistence, to prey on the seed in situations where such precaution had not been used.

PARMESAN CHEESE.—The country between Cremona and Lodi comprises the richest part of the Milanese. The irrigation too is brought to the highest state of perfection. The grass is cut four times a-year as fodder for the cows, from whose milk is made the well known cheese called Parmesan. The cows, which are kept in the stall nearly all the year round, are fed during summer on two of these crops of grass or clover, which are cut green, and in the winter on the other two, which are hayed. The milk of at least fifty cows is required for the manufacture of a Parmesan cheese. Hence, as one farm rarely affords pasture for such a number, it is usual for the farmers or metayers of a district to club together. The milk of 50, 60, or even 100 cows, is brought twice to the farm where the dairy is fixed; the person on whom devolves the task of making the cheese, keeps an account of the milk received, and the cheese is afterwards apportioned accordingly. In this fertile plain a farm of sixty acres is considered as a large one. These farms are subdivided into fields of three or four acres, for the convenience of irrigation; a practice which, in the course of a few years, impairs the quality of the grass to such a degree, that it becomes necessary to discontinue it. In this case, the sluices of the Gora are shut, the ground is ploughed in autumn, and in the following spring sown with hemp, which shoots up to a great height; when this is pulled, the ground is sown with leguminous plants. In the next spring it is sown with oats, which grow to the height of one or seven feet. The richness of the soil being thus sufficiently subdued, it is next cropped with wheat. Maize is then sown in the following spring; a second crop of wheat succeeds, and finishes the course of cropping. The ground is then left to itself, and is immediately covered with herbage. During winter it is manured, and the new meadow is then subjected again to the process of irrigation, which is usually continued for fifteen years. Thus the rotation in the Milanese extends to twenty years; five years for the growth of hemp, pulse, and grain, and fifteen for the growth of grass. Rice is also grown in some parts of the Milanese; but as it partakes of the nature of an aquatic plant, for the rice grounds are kept under water during nearly the whole period of its growth, its cultivation has been placed under considerable restriction by the government, owing to the malaria which it engenders.—[Evans' Italy.]

BEET ROOT SUGAR.—A Committee of the French Chambers have made recently a long and elaborate report on the state of their tariff, and the effect of high duties, in the course of which, the article of imported sugars necessarily led to an examination of the quantity of that staple manufactured in France.

The report "enters at great length into the state of the manufacture of beet-root sugar, and brings to light a variety of circumstances respecting that description of sugar hitherto but little known even in France. It appears that this sugar, not being liable to duties in any way proportioned with those levied on the colonial article, has established a competition in the home market which is highly injurious to the importer of and the dealer in the latter. The number of manufactories of beet-root sugar in various parts of France has been increasing rapidly of late years. Land destined for the cultivation of beet-root is let at a higher rent than for any other production. About 18,000,000 kilogrammes, equal to 36,000,000 lbs. or 18,000 tons, a year of the article are manufactured, according to the latest estimates, and the profits it yields to the manufacturer are enormous. The committee recommend that beet-root sugar should be taxed in such a way as to be of advantage to the revenue, without being injurious to the interests of the colonial planter and the refiner of colonial sugar."

WINE FROM THE COMMON BRAMBLE.—Five measures of the ripe fruit, with one of honey and six of water, boiled, strained, and left to ferment, then boiled again, and put in casks to ferment, are said to produce an excellent wine.—[Receuil Industriel.]

VALUE OF HOPS IN DISEASES OF THE SKIN.—One of the best external applications for many eruptive diseases of the skin is a strong decoction of Hops, in which the limbs or other affected parts are to be bathed several times a day. The decoction should not be used until it has become perfectly cold. In bad ulcers of the leg, the most satisfactory results have been repeatedly realized from this simple preparation.—[Med. Intel.]

[From the Maine Farmer.]

MODE OF SELLING WOOL PROPOSED.—Mr. Holmes: The time is approaching when we may expect something from you, as usual, guarding us against the intrigues of wool speculators. And why not endeavor to protect us against the intrigues of the unprincipled sharper, who is ready to take five or ten dollars from his neighbors, in the price of his cow, his ox, or his horse, and go his way boasting.

This man would not however directly take a shilling from his neighbor's pocket, nor would he be found at a gambling table. But, to return to the subject of wool. I would beg leave to suggest a plan, that I think would be likely to insure every wool grower a fair price for his wool. Let every wool grower in our vicinity unite and appoint a committee or trustees, of two or more, judges of wool, whose business it shall be to procure a suitable building or store. Let those trustees receive, weigh, and mark every man's bags of wool—well put up; and at a suitable time, open and assort each bag, turning them into No. 1, 2, or 3, according to their quality, setting each parcel to the credit of the owner. When a few tons are brought together in this way, and public notice is given, we should be likely to obtain the manufacturer's price, without paying we know not how many speculators their fee, and the expense would probably be much less than that of carrying it ten or more miles, and spreading it on the purchaser's floor, who well knows that he would not put it up again without a pretty fair prospect of obtaining a cent or more on a pound.

A FARMER WHOSE BUSINESS IS AT HOME.

Winthrop, April, 1835.

THE BORED WELLS OF ALABAMA.

The subjoined letter was an answer to our written inquiries made of an old friend. Though not designed for publication, there is no other reason why its contents should be kept private — and we hope that our friendly and intimate relations will serve with him as a sufficient excuse for taking this liberty — which is one that we have rarely used — and certainly never mean to publish any letter, if it can be supposed that the writer would have objected.

Marengo County, Alabama,
Dec. 20, 1834.

To the Editor of the Farmers' Register.

Your letter making inquiries about the bored wells, or fountains, and the prairie lands, &c. of this section of country, was received a few days since, and as I feel better to-day than for several past, (although I now write in bed,) I will now endeavor to give you all the information I have on the subject. When I arrived in this country in January 1832, I do not think I heard of a single instance where success had attended the efforts in getting water in this way, although many had attempted it. But an ingenious blacksmith (a Yankee,) turned his attention to the business, and his exertions were soon crowned with success. He says his success had been mainly owing to his having a hole in the lower end of his shaft, or rather the first shaft that is attached to the auger, the hole communicating with the auger itself, which is made by gun barrels being screwed one on the other. This hole, he says, prevents too much suction when the auger gets a very great depth into the rock. He and his company have succeeded in raising the water above the surface in this county, and in Greene, and in some instances it rises more than six feet above the surface. The quantity I am told varies almost in every instance, according to the depth of the lime-stone rock—the deeper that is, the less the quantity and the warmer the water, but it is easily cooled by digging a cistern close to the bored well into the lime-stone rock—which soon makes the water as cool as the best springs in Virginia. The quantity I am told varies from the same cause, from 500 to 2000 gallons in twenty-four hours. I have heard of no instance in which complaint is made of there not being water enough for all plantation purposes. The bored wells cost from $250 to $500, and even $600. I have only heard of two instances in which this man failed to get the water over the top of the surface, and they are both very close to me. In one of them, which is 560 feet deep, he states there was a split in the rock sixteen feet from the surface, and the water would rise no higher. But by digging a common well a few feet from the bored one, and inserting a tube from one to the other, he succeeded in getting into the dug well a plenty of water—but it does not run over: yet there is plenty of water, and the gentleman who employed him paid the full amount. In the other case, he bored 625 feet, and said he had to prepare other fixtures, &c. before he could go deeper. In this well water rose to within fifteen feet of the top: but for this he will not be paid, until he gets the water to flow out—which he says he will yet do. His fixtures, augers, &c. are ingenious, but simple.

They have invariably to bore through the soft lime-stone rock before the water rises, and into free-stone, coarse sand, and sometimes through several strata of flint-rock, before enough flows up: but generally, after the sand is well cleaned out, enough comes up to satisfy the owner, and they give up the job as finished. No seasons seem to have any effect upon the quantity—and the water is invariably "free-stone," and transparent as crystal. But it seems that where the well is close to the river, there is a saline taste. This I have heard of in two instances at least—and they are the only ones that I have heard of being bored close to it—for near the river the land is sandy, and they generally have springs. It appears also there is no calculating from experience what the depth of the well will be before it is bored, as they often vary very much in a short distance. It only seems certain that they are deeper nearer Demopolis, in this county, than any that have been bored in Greene county. It is the opinion of the borer that I have mentioned, (and I can assure you he is a *smart fellow*,) and it is also mine, that the free-stone, sand and rock, where the water flows from, was the bottom of the ocean when the marine deposites, the shells, and other matters that now form the lime-stone rock, were made upon it: but this you know must be conjecture.

I must inform you that the prairies in Greene county are much larger than in this immediate neighborhood, where the immense rich cane lands abound—and they lie from fifteen to twenty miles higher up the river; there, I understand, the wells are not so deep by several hundred feet as here.

The diameter of the auger that the man whom I have spoken of uses, is about three inches—and it is my opinion no more water would rise by using a larger one: but this is only opinion. In boring, they often encounter sulphur balls, which are so hard as to almost resist any tool they can make: and in one instance, (that of the deep well I have mentioned,) the man informed me he encountered and went through a stratum of hard load-stone. I must inform you also, that this tract of rich lime-stone land is but of small dimensions—not, I am sure, in one way more than from fifty to sixty miles, and the other twenty or thirty; and even in that, there are spots of sandy land that have fine springs on them, which are always of free-stone water, or most generally so. Even in the strong lime-stone lands near the creeks, where the land is broken, there are some good springs.

[From the New-England Farmer.]

Manufacture of Axes by New Modes.

Mr. Fessenden,

Dear Sir: If you think it an object, as I do, to show the ingenuity of Yankees in competing with foreign nations by their inventions and labor-saving machines, the following is at your service. It will afford new evidence of the onward march of improvement.

WILLIAM KENRICK.

Being lately at Douglas, Mass., I was invited by my friend, Griffin Clark, Esq. of that place, to visit the Manufactory of Axes, belonging to Messrs. Hunt & Co. At this establishment, about 500 axes and hatchets are manufactured in a day, of all descriptions, and of the most beautiful and perfect workmanship, and chiefly by a new mode. Besides adzes, and a variety of other species of edge tools, I noticed the Pittsburg broad-axe; it is not deep, but the broadest of all I have ever seen; the edge straight, and about sixteen inches in its width; its form resembles the ship-carpenter's axe. The Kentucky axes differ from our chopping axes, only in being heavier, and having a very long bit. The chopping axes and all of larger size are formed in the usual way by doubling the iron; but all of a smaller description are formed by a new and more expeditious mode. Bars of cold iron, about an inch thick and four inches wide, more or less, according to the size of the intended axe, or hatchet, are cut into suitable lengths with ponderous shears.

These pieces being cast into the forge and brought to the required heat, are cleft at one end, and into this cleft a tongue of cast steel is inserted; then being again heated, the complete union of the iron and steel is effected with the hammer. These being subjected anew to the fire, are laid on edge in a mould, and a single and powerful blow, or pressure of an engine, completes the profile of the small broad-axe or hatchet, and this blow being repeated a second time, renders the outline still more perfect. They are next transferred to another engine, furnished with a die; in this the axe is laid, and a heavy weight of iron similar in size to those employed in driving piles, being drawn up suddenly by water power, completes the form of the axe by its fall.

Another engine is about going into use, which will give to the rough and oblong section of a bar of iron the form of a perfect and beautiful axe or hatchet at a single and instantaneous operation. Thus are these instruments formed; but the eye for the insertion of the handle is made by boring through the cold and solid iron. The axe being fixed in a firm position above, a vertical drill of species of auger perforates them from below. This auger has a three-fold motion. First, a revolving motion on its own centre. Second, it moves in an orbit, which is that of a very eccentric ellipsis, corresponding with the form of the eye. Third, a vertical or upward motion at intervals, and at each time it has completed a revolution in its orbit.

An axe is bored in about twenty minutes; and one man will attend to twenty-five augers or axes; and another man is sufficient to sharpen the drills or instruments for the same.

Respectfully, your friend and obedient servant, W. K.

[From the London Mechanics' Magazine.]

Gun with a Revolving Breech — Simple Mode of Increasing the Tractive Power on Roads—Relief-wheels for Common Road Steam-Carriages.

Sir: The following matters are submitted for insertion in your truly valuable publication, should you deem them deserving a place in it.

I am, Sir, your obedient servant,

ROBERT CAREY,
Rector of Donoughmore.

1. The first invention to which I would call your attention is a gun with a revolving breech, containing seven chambers, brought in succession into position, by the single movement of elevating the hammer. I sent it to the exhibition of Irish Manufactures and Inventions, held at the Royal Dublin Society, in May, 1834, where it still remains. It is thus described in the Dublin Evening Packet, of the 22d of May: "In our last notice of this exhibition we described a gun with a revolving breech, capable of being discharged seven successive times within a space of from 25 to 30 seconds; we have just learned that the inventor is a clergyman, living in the county of Tipperary, and that the gun was manufactured in the town of Clonmell." I would here observe, that it has been suggested to me by military persons that the principle of the above invention would apply with great effect to cannon.*

2. I would in the next place submit a project directed to the increase of power applied to draught.

The means which I would suggest for the attainment of this object are a new formation of road, by which wheels *of any diameter*, that it may be found convenient to use, are rendered applicable to draught, without destroying the proper direction of the line of traction. I propose to give what I shall term the power-road (or that on which the power moves, whether it be steam or otherwise,) an elevation above the waggon-road (or that on which the train of carriages moves,) proportioned to the magnitude of the wheels which it may be found most advantageous to use. Assuming that the power attained from the application of wheels of different magnitudes, moving on ordinary roads, varies in the direct ratio of their semi-diameters, an elevation of three feet in the power-road would double the power, inasmuch as it would render applicable wheels of double the diameter that would apply with effect on an ordinary road. I am aware the advantage obtained on a railroad, by the application of this principle, is not so considerable; I calculate that the comparative powers of wheels of different magnitude, on a railroad, vary as the square roots of the semi-diameter of the wheels. An obvious advantage, exclusive of the increase of power, resulting from the above construction of road, would be its rendering an upset impossible.

3. The next project I would submit is directed to obviate an inconvenience (much dwelt on in a late number of your publication,) resulting to carriages impelled by steam, and *moving on common turnpike-roads*, from the inequalities or ruts of unavoidable occasional occurrence in roads composed of ordinary materials. I would have each axle furnished with two wheels additional, and exterior to the main wheels, and *of somewhat smaller diameter*. These additional I shall term relief-wheels. The effect of this contrivance must, I conceive it is obvious, be, to relieve the carriage from any shock from inequalities in the road, *except* when a depression or rut presents itself *at the same moment* to a main wheel and corresponding relief-wheel, which, it is obvious, except on roads *in total disrepair*, would be of extremely rare occurrence.

I beg to apologise for the extent to which this communication reaches, and am, Sir, your obedient servant,

R. C.

Donoughmore Glebe, Clonmell,
25th Jan., 1835.

* We should be glad to receive from our worthy correspondent a more particular description of this ingenious invention. A drawing is also very desirable.—[ED. M. M.]

WORKING OXEN.—The New-England Farmer says: We copy the following remarks on working oxen from the Memoirs of the Pennsylvania Agricultural Society, contained in a letter from the Hon. Levi Lincoln to John Hare Powel, Esq.:

The best broken oxen are those which are early trained and accustomed to the yoke with occasional light work. They are often broken as early as one or two years of age, with gentle and patient usage. At this period they are more docile and tractable, and it is thought become more powerful, by being sooner accustomed to each other, and to the application of their strength to the draft. I believe they may be taught to travel in almost any gait; certain it is, the rate at which oxen differently broken will walk with their load, would seem incredible to a person ignorant of the difference in the mode of their training. To accustom them to a quick pace, they should at first be driven in the yoke while young, without any, or a very light weight, and never heavily loaded, until they have arrived at full strength and maturity.

A great fault of many people is too much indifference to *the construction of the yoke*. Almost any shapeless piece of wood, with holes for the insertion of the bows, is made to answer; but to the case of the draft, the adaptation of the yoke or bow to the neck of the bullock, and the position of the staple and ring in the yoke, are altogether material. For common use, and particularly for ploughing, I have found that yokes were generally too short. Cattle of the largest size require a yoke from 4½ to 5 feet in length. In short yokes they are apt to *haul*, as it is termed,—that is, draw *from* each other, and to such a degree in some instances as to cross their fore legs, and destroy their power, and greatly impede their progress. *I once owned a pair made totally useless by this habit, and afterwards entirely corrected by the application of a yoke* 18 *inches longer*. A short yoke is necessary only in snow paths, where cattle would otherwise *crowd against* each other, the opposite of *hauling*, but of the same mischievous effect.

In respect to what oxen are made to do in a short time, or as an experiment upon their strength, I must refer you to the results of our ploughing matches. With us they are but little used upon the road, except in the transportation of heavy loads for short distances in the same town, or between neighboring towns. One reason why horses are preferred for waggoning on the road, may be that they can be made to travel quicker, and that from the construction of the hoof they are less liable to lameness than the cloven-footed ox, by becoming foot-sore. On the other hand, the patient and steady labor of the ox finds no substitute in the horse for the service of the farm; and the latter is seldom seen there except in occasional aid of the ox team, or with the light plough between the rows of corn. The value of a yoke of oxen, or a pair of horses, for use in all the business of a farm, admits of no comparison. So decided is the preference for the former, that I do not believe a single farmer can be found in this extensive agricultural county, who performs his labor by horses without oxen; while there are *hundreds*, I had almost said *thousands*, who make no other use of horses in husbandry, than to furrow for planting, and plough among their corn for hoeing.

Our oxen are kept in a cheaper and less expensive manner than horses. In the summer they are uniformly grazed in the pastures. In the cold and winter seasons they are put into the barns, and fed upon the *stock* hay, as it is called, that which grows in meadows, and upon the fodder of corn stalks, husks, &c. unless, indeed, they are more severely worked than usual, when hay of better quality is given them; and in all cases, as the spring advances, their keeping is improved, and with better hay some grain is added. I speak of the general practice of farmers. There are some who keep their oxen more *generously*, and others more *hardly*, than I have mentioned. But with a clean and warm stable, *with daily application of the curry-comb and card*, and coarse food, without *severe* labor, the best farmers will at all times exhibit teams of most vigorous and powerful cattle, and their best hay and grain will be saved in their beef and pork, and in the produce of their dairies, for the market.

SALE OF WOOL.—It is stated in a Claremont, N. H. paper, that Dr. Leonard Jarvis, of that town, sold, a few days since, 18,000

pounds of wool, all of his own raising; and received for the same about *fourteen thousand dollars!*

[From the Genesee Farmer.]

ON DRAUGHT, No. IV.

Canal Boats. — The second division of this subject has reference to the *substance* or *vehicle to be moved.* But as the dragging of heavy substances, without the aid of some vehicle to relieve the friction, is quite behind the intelligence of the age, I shall have no reference to the moving of weights except through this agency. Of these, there are only three which will require any special consideration, to wit, Canal Boats, Sleds or Sledges, and Wheel Carriages.

The present number I propose to devote to the consideration of the draught of Canal Boats, and in so doing, it will be necessary to connect with them, in some measure, the subject of canals, or the *channels of conveyance.*

To those of us who are in any way connected with the transportation of property upon our canals, this subject presents an interesting field of inquiry; and I regret that my limits will not permit me to do more than glance at a few of its prominent features.

It will readily be perceived, that the great advantage of canal transportation depends upon the facility of giving motion to bodies upon water, and the little power required to effect it. It is not necessary here to enter into a discussion of the philosophical principles of Hydraulics, for we are all familiar with the fact, that a body floating upon water may be put in motion by a very small force; though the movement must be slow in proportion to the increase of resistance. The resistance to a body moving in water arises from the striking of the particles against the front of the moving body, and this resistance of course increases in proportion to the velocity of the body. The ratio of this resistance is ascertained to be as the square of the velocity; and the power required to be exerted, as the cube of the velocity. For instance, if the speed of a body be trebled, the number of particles of water it meets in its progress for a certain time is trebled; and the resistance of each particle being also three times as great, owing to the body's striking it with treble the velocity, the united effect is nine times as great; therefore, if in the first instance it required one pound to draw the body, it would now require nine, which is the rate of resistance; but nine times the resistance, moved at three times the velocity, will require *twenty-seven* times the power to be exerted; and this is the ratio of power.

Now, although it requires but little power simply to move a body floating upon water, still this principle of resistance forms the impediment to any useful effect in speed, which may be gained from the application of power upon canals; and, therefore, the great inquiry must be, how can this resistance be overcome or obtained.

To effect this, we can resort to only three expedients; first, to the application of power, either animal or mechanical; second, to the form and weight of the boat; and third, to any circumstances or expedients which may change or relieve the resistance of the water.

We have already estimated the force of traction of the average of horses to be 125 lbs.; and their capability of labor, without injury to themselves, at 6 hours per day, with a velocity of 3 miles per hour. In England the draught of an ordinary canal boat, at a velocity of 2½ miles per hour, is estimated at $\frac{1}{256}$ of its weight; or in other words, where a boat weighs 33 tons, or 73,920 lbs., the ordinary force of traction exerted upon it will be 80 lbs., which is $\frac{1}{924}$ of the load. Upon the canals in the State of New-York, however, I should judge the average force of traction to be even less than 80 lbs., at a velocity of 2½ miles per hour, though the actual force exerted is often much more, for the reason that their speed is greater. Now supposing this estimate to be correct, then, as regards our canals, with the same speed and duration of labor, an increase of weight may be safely made, till it meets a force of traction of 125 lbs., and this would increase the load to about 50 tons. But there are other difficulties to overcome on canals, besides the mere resistance of the particles of water; for the confinement of the fluid in so narrow and shallow a channel increases the resistance the boat meets with, just in proportion as the particles of water, which are displaced by the boat, are resisted by those contiguous to the sides and bottom of the canal. The resistance, therefore, in a canal, instead of being in the ratio as above stated, will be vastly greater, and be constantly varying with every change of the channel, as all practical men well know. We therefore cannot form a correct estimate of the resistance to be encountered, nor of the force required; but experience has taught us, that upon the Erie canal, an ordinary boat loaded to weigh about 30 tons, and going at the rate of 2½ miles an hour, will create a resistance whose ratio will nearly or quite equal the square of the velocity. Any increase of speed, therefore, must require a corresponding increase of power, to overcome the increased and increasing resistance; and hence we find why it is that there is such an enormous expenditure and waste of animal strength upon our canals, when loaded boats are forced along at the rate of 4 and 5 miles per hour.

But, as I have before stated, I do not consider, that a boat loaded to weigh 30 tons, and going at the rate of 2½ miles per hour, will require a force of 125 lbs., nor indeed much more than half of it; and I therefore draw this conclusion, that upon the Erie canal, a boat, to meet the force of traction of 125 lbs., may either be loaded to weigh 50 tons, with the velocity of 2½ miles per hour, or with a load of 30 tons, to increase the velocity to 4 miles per hour. But after all, this estimate will not hold good in practice, for there is so much difference in the form of boats, and consequently in the resistance created, and the loss of power in the length and elasticity of the tow-line so great, together with various other contingencies, that I do not believe the average force of traction upon our canals would exceed 80 or 90 lbs.; and that, therefore, the speed of a boat weighing 30 tons ought not to exceed about 3 miles per hour.

With respect then to the application of power, whether animal or mechanical, we find that with a given weight and velocity, the effect produced depends upon the local resistance; or in other words, taking the resistance as it is upon the Erie canal, the force required to propel a certain weight at a certain velocity will exceed the cube of that velocity just in proportion as the sides and bottom of the channel, or any other cause, hinders a free displacement of each particle of water.

But again, the *shape* and *weight* of a boat must also have an important effect upon the resistance, for it is evident, that if any substance is sunk deep in the water, and presents when in motion a blunt square surface for resistance, it will displace more water, and require a greater force, than a sharp elongated body only partially immersed.

Upon the *structure* of the boat, doubtless much depends; for though two boats may be equal in weight, still the resisting surface presented to the water may be so different, that one will require double the force to propel it that the other will. But to do justice to this part of the subject would require more time and skill, and knowledge, than I possess. It has, first or last, engrossed the talents and research of scientific men throughout the world, and is now daily occupying the ingenuity and skill of artisans, not only in our own country, but in Europe. So far as our own canals are concerned, every boat-builder seems to have a general model of his own, which he is constantly varying to suit his fancy or that of his customers. The object of all is to arrive at the same results, to wit, the diminution of resistance, with an increase of effect; but in obtaining this result, the models of their boats are as varied as the faces and forms of those who make them. No general rule can be given on this subject, except that the model which will admit of the greatest weight and velocity, with the least expenditure of power, is of course the best.

Connected with the model of the boat, is the weight and cargo. It is evident that as you increase or diminish the one, you may increase or diminish the other; and this is a matter of considerable importance, where the profit of the load depends, as it always must, upon the cargo. If the weight of a boat and cargo is limited in any measure by the force of traction, velocity and resistance, then it becomes all important to get the requisite strength and capacity with the least possible weight, that the greatest scope may be given to the cargo. But aside from the diminution of the cargo by the increased weight of the boat, a great loss is sustained in the first cost of building materials, and also in the subsequent wear and tear of the boat; for it is evident that the tendency of the weight of the boat itself is to strain it, and every thump it receives will lessen its durability.

Hence we see the extreme folly of building heavy cumbersome boats, whose capacities for receiving loads are no greater than those of half their weight, and yet require double the force to propel them. This, too, is a great evil, and the source of an enormous waste of power upon our canals, and I have no doubt, if it could be fairly estimated, that the waste and loss of power in this particular, and the forcing of boats beyond their proper speed, as before suggested, would nearly or quite pay one quarter of the tow-path expenses.

But there are other circumstances which greatly tend to relieve and change the resistance of water in our canals, and I propose to make them the subject of another number. QUERCUS.

DOGS. — One of the greatest inconveniences of a family or farm dog, is the dirt and mud which he daily, and almost hourly, brings into the house on his feet. The poor dog thus incurs the displeasure of all the female household, and is often the occasion of much fretting and scolding. To prevent this, have a comfortable place for the dog out of doors, and exclude him from the house altogether. He soon learns his duty, and never shows a disposition to enter any part of the dwelling. S. F.